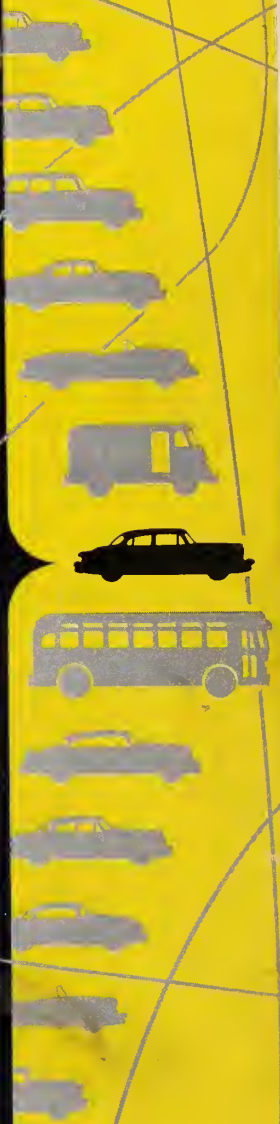
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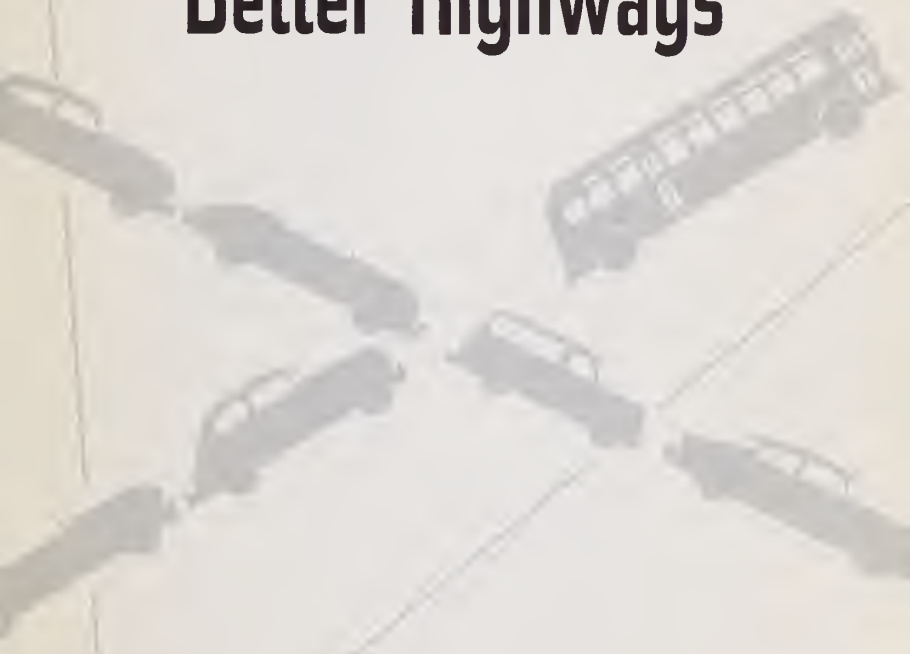
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how to plan and pay for
Better Highways



GENERAL MOTORS
DETROIT 2, MICHIGAN



Harlow H. Curtice, left, President of General Motors, presents the $25,000 first national award to Robert Moses, New York City Commissioner of Parks, in the General Motors Better Highways Awards essay contest.

THIS booklet contains the names of the winners of the national and regional awards in the General Motors Better Highways Awards contest. It also contains in full the three national winning essays and summaries of twelve others which won top awards. These, in the opinion of the five judges, were the best of the approximately 44,000 submitted.

We of General Motors congratulate the winners, and we thank the judges for their time and painstaking effort.

We hope our contest has helped to set in motion a continuing wave of public discussion and understanding of the highway problem, and a persistent public demand that it be solved. For as Mr. Robert Moses says in the essay reprinted in this booklet: "The highway dilemma is a major concern of every man, woman and child in the country."

The essays submitted in our contest reinforce our conviction that it is idle to hope for a single, easy remedy for the highway crisis. The road problem is a composite of many problems, and each of them must be solved individually. But no road improvement program can succeed without public understanding and public support.

General Motors will continue its efforts to increase that understanding and to enlist that support. We hope many others will join us.



HARLOW H. CURTICE
PRESIDENT, GENERAL MOTORS

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REGIONAL WINNERS

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Report on General Motors Better Highways Awards Contest

General Motors has long been interested in the highway problem. Working in many fields and through various organizations, it has played an active role for many years in combating this increasingly complicated situation. In 1951, through the cooperation of GM dealers everywhere, the "Let's Get Out of the Muddle" motion picture was shown to more than 400,000 people, and the booklet containing the text of the film was distributed to nearly 800,000.

As the next step in this continuing campaign to overcome our highway and traffic problems, General Motors announced its Better Highways Awards contest in the fall of 1952. The conditions of the contest were simple. An essay was to be written on the subject "How to Plan and Pay For the Safe and Adequate Highways We Need." Anyone was eligible except the judges and their families. There was no limit on length and no preconceived notions of what should be covered save the two general points in the title. The five judges, nationally known in their fields and all interested in our highway situation, were to select the papers which in their opinion offered the best answers to the problem. The first prize was $25,000; there were five other national awards, nine regional awards, and finally three awards for each of the states. In all, the prizes totaled $194,000.

Frankly, no one knew what to expect from this contest.

Involving technical and financial subjects and requiring at least some knowledge of the problem, it was a far cry from the usual "why I like" contest in 25 words. As was said in announcing the contest, "We hope that the winner will come up with an idea worth to the nation 25 times the first award of $25,000. But we will feel it is more than worthwhile if our contest only causes more nationwide thinking, more nationwide discussion, and more nationwide understanding of the facts of our highway requirements."

Now the contest has come to a close and the judges have selected the winners. You can see some of the results in the winning essays reprinted in this booklet and the ideas proposed for solving the problem. But you cannot see the thousands of other contestants who now have a greater interest and understanding of the problem through the work they did in preparing their entries, and the even greater number who did not actually submit an entry but who did come in contact with the contest in one way or another and as a result know that there is a highway problem and that something is being done about it.

The three top entries are reprinted in full in this booklet and twelve others are summarized. It is easy to see from even this small number that the essays represented the individual's own views—and that all the individuals did not agree. How could they? Anything involving such subjects as taxation and relative authority of Federal, state and local governments is bound to provoke controversy. While we may not agree with everything in these winning essays, we are glad to present them to the public view for intelligent appraisal.

But with all the variations of viewpoint, it is interesting to note the points of agreement. For example, everyone

agreed that there was no one simple solution to the highway problem. It is a complex situation requiring much effort by many people in many fields. Again, most contestants agreed that it was primarily a financial problem—that we are more advanced in highway engineering than in highway financing, and that we have the men who know how to do the job if they can get the money to do it with. Along this same financial line, there was almost unanimous irritation about diversion of motor vehicle and highway user taxes to general purposes. The diversion of state taxes has been under attack for years, but many contestants were equally emphatic that the Federal government should either eliminate its taxes on motor vehicles and fuel or use these revenues for highway purposes entirely.

Above all there was agreement on one point—that no program would be successful and there would be no solution to the problem without the solid support of public opinion. When the people of this country are aroused, things get done. The public must be informed—first, that there is a problem; second, that something can be done about it. The organized associations and highway groups have done and are doing important work. What is needed now is understanding and support by the millions of individuals in cities and towns and on the farms across the country.

We feel that this contest has been a step forward in this endeavor, and hope that a positive highway program will continue to grow through the efforts of people everywhere.

Selection of winning entries by judges did not necessarily constitute personal endorsement by them of the ideas in the essays. Similarly sponsorship of this contest, payment of awards, publication and distribution of essays, are not to be interpreted as expressions of agreement or endorsement by General Motors with respect to the ideas set forth in these essays.

BOARD OF JUDGES

These nationally-known men constituted the Board of Judges for the General Motors Better Highways Awards contest. They gave unsparingly of their time and efforts, and their sincere interest contributed greatly to bringing this contest to a successful conclusion.



NED H. DEARBORN

President, National Safety Council



THOMAS H. MACDONALD

Commissioner, Bureau of Public Roads,
U. S. Department of Commerce (1919-1953)



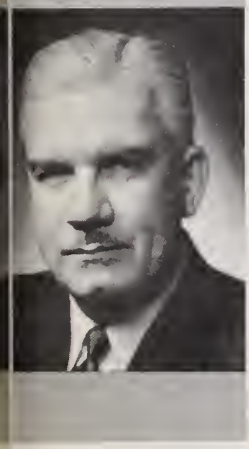
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of Public Works; Chairman, New York State
Thruway Authority



NATIONAL AWARD ★ ★ ★ ★ ★

ROBERT MOSES
New York, New York

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THE PRESENT PICTURE AND A LOOK AHEAD

The highway dilemma is a major concern of every man, woman and child in the country. This in essence is the problem:

We have fifty-three million cars of all sorts in use or at least licensed today, of which over one-third are old and mostly fit only for early retirement. Of these fifty-three million vehicles, forty-three million are passenger vehicles and ten million trucks and buses. The roads on which these vehicles run are by and large inadequate in mileage, location, width, capacity, and durability. They are unsafe, of inferior, dated design and poorly lighted and policed.

We have only in comparatively recent years learned from traffic surveys and everyday experience that most automobile trips begin and end in urban areas, that by-passing such areas is in most instances simply steering away from the central problem, that modern urban road construction is at once difficult and costly but indispensable, and that the highway problem logically includes major strategically located bridges and tunnels, elimination of railroad grade crossings, regulations of many kinds and on and off street parking in all its aspects.

No useful purpose would be served by a belated attempt to fix responsibility for the discrepancy between car and road. It is the future, not the past that counts. We must catch up on road construction and keep pace with an increasingly motorized civilization. How to accomplish this within our abilities and means under normal conditions—this is the task.

At the present rate of production, assuming motor defense requirements slow down somewhat, that there is no all-out war, and that a depression as distinguished from a minor recession is not in the making, estimates for 1963 show sixty-eight million cars of all sorts, of which thirteen million will be trucks and buses. Statistics also indicate that the makers of cars average a gross income of some ten billion dollars a year on their products. By way of startling contrast, the present average outlay for new construction on roads of all kinds is only about two billion seven hundred million dollars a year. The discrepancy becomes greater and the gap yawns wider every year. An adequate road system if we could get it in, say, ten years, would cost about fifty billion dollars. Six lane

parkways today cost up to three million dollars a mile in urban areas. Six lane expressways with service roads cost up to ten million dollars a mile according to location, number of tenants to be removed, number of traffic interchanges and other factors. Ordinary two lane highways with good surfacing average over one hundred thousand dollars a mile where there is no exceptionally heavy grading. There is no likelihood that these costs will go down materially in the next decade. Any program which does not rest upon such conservative figures is unrealistic, unsatisfactory and unworthy of American enterprise.

It would be pleasant if this problem could be solved by some inventor working in an obscure laboratory or office with an entirely new formula, recipe, sleight of hand device or alchemy, a unique amalgam of ingenious materials, methods, economics and budgeting, immediately recognized by experts and instantly accepted by the public. In such contexts, the talented amateur, unhampered by experience and responsibility, dreams of a device which at one stroke through one central agency can finance and build, without prolonged debate, stultifying compromises and division of authority, a country-wide program and guarantee its early completion. Even if such a solution were theoretically possible, it would involve so many dangers and bad precedents, so much concentration of power, so manifest a violation of states' rights, local home rule and representation, that it would never get beyond the paper and perspective stage. Democracy, as we practice it, is a tedious and irritating business not to be confused with Russian five and ten year plans based on forced labor and liquidation.

Nothing much therefore will come from wishful thinking and oversimplification. It is much more likely that the answer for the next decade at least will be a concerted, unremitting attack on established orthodox lines from many quarters requiring the cooperation of innumerable public officials and industrial experts and laymen, technicians and administrators, drivers and builders, labor and capital, bankers and borrowers, advertisers and readers. Persistent, largely undramatic, daily work directed toward agreed, realizable limited objectives is what we need.

WHY A TEN YEAR PROGRAM?

At first blush a ten year program may seem unduly long, but a glance at the practical difficulties in the way will show why a faster schedule is impractical. We still have some defense priorities, but it is likely that defense construction will taper off. Even then, we shall have limited trained and competent engineering and contracting personnel, equipment and material for the program from planning to construction and finally inspection. Only so much work can be done at one time without overburdening the construction industry, raising prices and contributing toward inflation. Too much and too rapid construction would paralyze urban areas and make their daily functioning almost impossible.

We must carefully observe and gauge urban and suburban growth, housing construction and other trends to be sure that we are building in the right places and on the proper scale. In moving tenants out of the path of highway construction, we must proceed in a humane, decent way and help them to find other homes and business places. Moreover the minimum schedule of major highway building in urban areas runs to at least three years for each large project—a year to design and sell the plan to those whose support is needed to lift it from idea to reality, and at least two years to clear and prepare the site, build on it and landscape it.

Let us consider then the strategy of a concerted attack. The major considerations are these:

1. Standards and plans.
2. The administrative jurisdictions involved in construction, and the proper place of each.
3. Practical means of financing.
4. The special problem of railroad grade crossing eliminations.
5. Parking.
6. Uniform safety and other regulations of road, car and driver and roadside control, including billboards.
7. Public support by the auto and other industries, safety organizations, the press, advertising, radio, screen and television, and by exhibits and prizes.

These factors will be considered in order.

STANDARDS AND PLANS

All states have urban, primary and secondary highway programs of some sort, in one way or another eligible for federal aid. State laws usually fix routes but only in the most general way, that is, by designating the starting and finishing points with occasional intermediate locations. The more important arteries meriting federal aid are placed on the official map of the Federal Bureau of Public Roads in the Department of Commerce. State programs differ widely in scope, detail and reliability and run all the way from ill defined sketch lines on large-scale general maps to routes which represent real study and in some instances accurate right of way and first stage, preliminary and even final specifications. Postwar shelf planning with federal or state aid or both has produced many useful preliminary and final plans. Some of them, to be sure, suffer from obsolescence and require considerable changes to bring them up to date.

In some areas the county is an important unit, in others the township, and of course each city and village has its present and projected street system, not to speak of special districts, regional agencies and public authorities, regional, state and local. Some municipalities have active, well-supported planning and zoning commissions, equipped to lay out, modify and control the backbone and skeletal system, the arteries and veins, the hub, spokes and rim—by whatever metaphor you choose to describe vehicular systems. Others completely lack such an agency, starve a weak and ineffective one, or leave all this central planning to public works and engineering agencies which proceed on a hand to mouth basis without much foresight or integration with other municipal activities. There should be made readily available to every type and size of municipality, standard manuals of planning and zoning describing the process of legislation, the machinery of administration and a digest of applicable court decisions.

While standards are well established in most branches of highway construction from the simplest three rod road to the most modern and sophisticated expressway or parkway, there must still be types which have not been seriously studied, much less tried, and endless variations of the best we have in use are possible. For example, the combined vehicular express rail and

rapid transit road has not been thoroughly canvassed. We have only a few successful experiments in increasing the efficiency of parkways and expressways where full additional lanes are impractical because of inadequate rights of way and the excessive cost of rebuilding bridges. Here narrow center dividers separating opposing traffic lanes, accelerating and decelerating lanes, space for disabled cars and other similar devices are required. It should be shown how additional lanes can be added on important streets by the device of arcading sidewalks within buildings where no large consequential damages for easements may be anticipated.

We do not have anything like complete information free from prejudice on the types of elevated highways and parkways which do not depress the value of surrounding property. We also lack reliable graphic reports on increases in adjacent and neighboring values due to building roads, parkways and crossings. Elevated parkways and expressways, contrary to uninformed opinion, need not blight the areas through which they pass. If properly designed and lighted, the space under these structures can be used for recreation facilities, parking and other useful and attractive purposes. Decisions as to tunnels and against bridges at important water crossings are often settled on the basis of prejudice instead of fact.

In New York there have been substantial increases in neighborhood values adjacent to parkways and expressways due largely to the fact that they were not designed as gasoline gullies. Parks, playgrounds, walks, bicycle and bridle paths have been constructed as incidental improvements on their borders. In many cases they have been located along waterfronts and streams of natural beauty and have been coordinated with beaches and other recreation facilities. In many places, particularly along the ocean and bay fronts, overlook parking strips have been built.

We should do much more advance mapping of arterial rights of way to anchor routes and prevent building. These should include actual vesting of title by purchase or condemnation as well as official notice to owners to prevent building in mapped streets. The many complex problems of tenant removal should also be anticipated and prepared for.

Manifestly there is much to be done to improve highway planning and standards to make the experience of more

progressive states and communities available to those which are lagging. There is altogether too little research in the highway field. The federal government does a little but not nearly enough. The Bureau of Public Roads was shifted to the Department of Commerce because of its supposed relation to other forms of transportation centered there. This transfer, whatever its merit in a federal reorganization program, should at least produce some evidence as to the proper respective roles of road, railroad, water and air carriers in the passenger and freight field, the entry of railroads into bus and truck business and similar questions of basic nation-wide research.

Some states go in for limited research either separately or in cooperation with the federal government through such agencies as the American Association of State Highway Officials, the Highway Research Board and the Automotive Safety Foundation. Municipalities do almost nothing. Considerable study of value is made commercially but of course with a bias in favor of the product of the company which does the laboratory, field work and publication.

The auto industry in all its ramifications, the designing and inspecting engineers and the road material men and contractors do not work together enough, do not pool their information as much as they should, tend to stick too closely to their own limited fields, depend too much on occasional conferences, conventions, dinners, casual meetings and trade and professional publications and too little on formal, well directed and financed, day in and day out cooperative working arrangements.

We still lack simple, generally understood language and terminology to replace obscure gobbledygook and code words in describing the various types of roads, streets, highways, boulevards, parkways, mixed traffic, limited and controlled access arteries, freeways, thruways, turnpikes, expressways, interchanges, cloverleaves, dividers, access drives, accelerating and decelerating lanes, "origin and destination" statistics, etc. We need simple Anglo-Saxon words used and interpreted in the same way by everyone.

Again in the field of design and inspection of construction we have no consensus as to the relative merits and usages of regular, salaried civil service or governmental forces compared to outside consultants who work for a fee or percentage,

and we have the most astonishing variations as to salaries, fees and percentages. There are cases where government employees paid out of limited construction money string out work and run up costs to hang on to their jobs. Some consultants have taken on more than they can handle competently and show more interest in profit than in professional achievement. In some instances, particularly on large new projects, the best solution is a combination of civil service employees and consulting firms, where the former supply intelligent supervision, set standards of design and exercise general control and the latter furnish the manpower and service required to get out the plans and specifications expeditiously.

For both public and private work we must have an assured supply of well trained young men. The engineering colleges are not supplying enough of them. It has been estimated that we need sixty thousand new engineers a year. Our colleges are turning out a little over half this number. Corporations involved in the motor industry should contribute more liberally out of corporate earnings under the federal five percent exemption rule to enable the universities to meet this demand. We must have better salaries, less red tape, faster promotion of capable people and better incentives in the civil service.

All of these subjects require a free exchange of views, more facts, and more standardization. On the other hand there is such a thing as too much standardization. This is a big country with extremes of climate, people, traditions and practices. The process of raising standards must necessarily be aggravatingly slow, but it should be steady. Standards must be adapted to local conditions.

ADMINISTRATION

To those unfamiliar with our unique federation of sovereign states and our inherited conceptions of limited federal powers, states rights and municipal home rule, the administration of highway building and maintenance must seem incomprehensible. And yet somehow it can and must be made to work. It requires, however, many evolutionary modifications but not by any means a revolution. We must get away

from fixed ideas about the exact boundaries of each jurisdiction, from dogmatic assertions and political chestnuts to a practical approach based on what will most quickly and smoothly get us to our objectives.

Traditionally our federal government from the very beginning and under its great founders has sponsored and supported national highway and other transportation. Washington and Jefferson were both national planners in the broadest sense. Washington was vitally interested in this subject. From his early manhood his aim was to penetrate the wilderness and link the Ohio Country with the Atlantic seaboard. To checkmate the French he conceived and hacked through Braddock's Road following an old Indian trail, Namocolin's Path, from Fort Cumberland to the Forks. As President, he limited his recommendations for public improvements to Post-Office and Post-Roads and additional "Cross-posts" because the new federal government had no money, and he continued to press his program when he left office.

Jefferson was in complete agreement with Washington's arterial concepts. He advocated the Capital City plan. He favored internal improvements but was also held back because of lack of funds. Gallatin worked out a program of internal improvements which Jefferson approved. By 1806 there was an increase in national revenue to almost fifteen million dollars. After meeting all current expenses and paying off millions in interest and principal on the funded debt, Jefferson had a surplus of four million dollars in the Treasury. He recommended keeping up the tariffs so that this surplus could be spent on proper roads, canals and other improvements of value to the nation.

"By these operations," he said in his message of 1806, "new channels of communication will be opened between the States; the lines of separation will disappear, their interests will be identified, and their union cemented by new and indissoluble ties."

Today the Federal Bureau of Public Roads is at the apex of the triangle, the head of the hierarchy. It sets standards, determines what routes shall have federal aid, gives advice and help and is responsible for integration of state systems, continuous travel, military and emergency needs and the encouragement of a nation-wide program. Over the

years this agency has functioned well. It has not been bureaucratic at the top. It has generally been intelligent, persuasive, diplomatic but incorruptible and reasonably firm as to standards. Without it we should have no national through routes uniting all sections of the country, few comprehensive long range state programs, no uniformity of design, no progress in the less populous and prosperous states and municipalities, no official leadership, no continuing Congressional support and no formula for federal aid. Nevertheless the Bureau has lacked adequate authorizations and appropriations and the power to prevent the lag in road building. We must now make up for this. The federal machinery is there. It has public respect. It needs to be amplified and implemented.

There are forty-eight state highway departments. Some have matched the federal aid to which they were entitled only fast enough to ward off redistribution elsewhere. This must be corrected. Municipalities of all kinds also have their separate highway and street jurisdiction. Their claims upon federal and state funds only began to be recognized when we scrapped the silly theory that financial support stopped at the boundaries of urban areas. This more than any other obstacle was responsible for the present road congestion and traffic strangulation. Much more federal and state money is made available in some municipalities than in others. The tendency everywhere continues to reflect the habits of mind of legislative majorities usually dominated by rural members who believe in acreage as against people, as though both are not entitled to fair consideration. A larger share of state as well as federal funds should be allotted to cities, especially large cities where problems are most intricate and arterial costs are highest.

To these jurisdictional units must be added the special regional bistate bodies, the state and municipal public authorities and turnpike commissions, which depend for their financing upon tolls usually without involving general public credit, but in some instances backed by public credit to reduce interest charges.

Our new toll roads are simply a logical extension of strategic public crossings, which in comparatively recent years took the place of the old privately owned bridges, tunnels, viaducts, plank roads, turnpikes and ferries created by special bills, franchises and permits of unsavory history. There is no

difference in principle between a toll over a bridge or through a tunnel and one on a modern express route, provided these facilities are publicly established, owned and operated. It may be easier to collect charges on a short crossing than on a long parkway or thruway with several points of access, but they are essentially identical devices by which we capitalize anticipated earnings to build superior facilities not otherwise immediately attainable.

We must assume that there will continue to be a complex administration of highways, that the federal government must set the pace, that it must contribute a proportionately larger percentage of aid to routes of more than local significance and that it must continue to raise and enforce standards. Extensions, amplifications, improvements and innovations in financing this complex system will be more effective than attempting to introduce a complete revolution in administration.

Beyond the boundaries of our country, the federal government should take a livelier interest in the Pan American Highway—that is, in finishing the main Central American route without further inexplicable delays. An eastern spur should be studied with a ferry from Key West to Havana where it would split, one fork westerly with a ferry to Yucatan and a connection to the main Pan American artery, the other fork easterly to Haiti and eventually through the Dominican Republic to Puerto Rico. This Pan American project will not be justified by traffic alone for some years, but it has enormous hemisphere significance as a unifying bridge to the Caribbean Islands and South America.

FINANCING

How to pay for the modern safe system of highways needed to keep abreast of the demand for and the output of cars—that is the crux of the question. We have at last recognized the problem. We have the technical know-how. We have the plant and materials. We have the ambition. Have we the courage to finance the needed program and then keep up with current requirements? Given a disposition to use every tried and promising expedient and to keep away from engagingly simple panaceas, I believe the job can be done without dislocating our economy, competing unfairly with the satis-

faction of other needs or tearing up so much of the landscape and streets that ordinary business cannot function.

Let me begin with the debated slogan—"No more diversion of highway user taxes." There is an increasing number of well informed people who honestly believe that every dollar of gasoline and oil and even license taxes should in the constitution of every state be segregated and usable only for highway construction and maintenance. As the matter stands, twenty-four states have constitutional auto segregation provisions of some kind.

In some states little thought has as yet been devoted to capitalizing these revenues to insure sufficient funds for rapid and uninterrupted progress. We must, of course, concede that even if all of these revenues were thus impounded, the total would still be insufficient to build and maintain an adequate highway and street system unless we omit policing, the traffic courts and some other costs. If we were to charge all traffic police and enforcement officers of all our cities and villages to gas, oil and even license receipts, there would be a totally different picture. There is strong evidence that in some states the segregation of all gasoline and licensing taxes would result in a smaller total than is now spent annually on highway construction and maintenance. The New York State Budget Director, for example, claims that the total expenditures for highways and streets in New York State since the war have been nearly twice the amount of highway taxes and fees collected in that period.

There is, indeed, a strong argument in favor of the old established principle of putting all government revenues in a single General Fund, not in a number of separate sealed boxes labeled for specific purposes on the debatable theory that he who pays shall get the benefit. Those who hold to this principle point out that segregation of revenues might also be claimed by users of parks, establishments which pay business taxes, people whose purchases include sales taxes, private carriers which are subject to franchise taxes and patrons of race tracks. This line of reasoning is taken seriously in several large states. The argument for gasoline revenue segregation perhaps including license plate receipts may be said therefore to be persuasive in many but by no means all states. It is not a sine qua non. It should not be worked to death. There are too many

paid secretaries of automobile associations who make a living by exaggerating the diversion argument, opposing all tolls and generally holding back construction by insisting that it must be on their terms and no others.

Here again, there is no one formula which will be adopted immediately throughout the nation. The idea must win its way. There will for some time be states which are wedded to the General Fund principle and not ready to adopt auto diversion amendments. Moreover, it takes from three to four years on an average to get an amendment through with a statute and machinery to make it effective. The highway program should not be held up awaiting unanimous action on segregation in all states. We must also remember that the segregation of auto taxes in states which as yet have no constitutional requirement to this effect will create shortages in their General Funds which must be made up by other taxes. This cannot be done with mirrors, or solved by a slogan. Construction costs money, and the expenditure of public money means taxes.

The next slogan to consider is pay as you go as against bond issues and borrowing. Governor Alfred E. Smith shrewdly remarked in his first term that the trouble with the pay as you go policy is that you don't pay and you don't go. Private industry faced with the need of expanding its plants and other facilities does not proceed on the pay as you go basis. It issues securities or borrows the capital required to plan and build extensions promptly instead of adding a wing or addition here and there with current operating balances as they become available. It must be admitted also that borrowing involves interest as well as amortization.

Properly controlled borrowing, that is capitalizing anticipated future earnings or receipts, is precisely what distinguishes a free enterprise society from a socialistic or communistic one. There is no sound argument in principle against borrowing to give us an adequate highway system in an automotive age. Borrowing can, of course, be overdone. It can be poorly planned. It should not be used exclusively, but it has its place and it is an increasingly important one where we are so far behind, and where the pay as you go slogan has been so ineffective.

It is apparent that if we are to raise fifty billion dollars for a ten-year highway program, we must have more federal aid for main and subsidiary routes, more state and local bond issues involving the general credit, and more special bond issues supported by capitalized auto revenues. Finally, we must float more bonds of regulated public, regional, bistate, state and municipal authorities dependent upon the revenues they collect and with the right to pledge the credit of the subdivision of government in which they function only where it is necessary in order to reduce interest rates.

A reputable public authority can confidently issue a million dollars of two and one-half percent twenty-five year income tax exempt bonds with no state credit, if it can prove to prudent investors that it has in prospect sixty thousand dollars annually in net revenues. The great advantage of this procedure is that work begins promptly, is uninterrupted, is not dependent on protracted annual arguments about appropriations, is not in competition with other desirable public works and purposes, and preserves a sound relation between tolls and costs.

Another advantage of authorities is that as their bonds are paid off they can refinance to build better and more extensive highways as the need is demonstrated by actual usage. This assumption is, to be sure, attacked by those who claim that authorities tend to perpetuate themselves, never go out of business and resist turning their facilities over to ordinary government departments for free use. There is some truth in this, but the authority toll idea must be increasingly used in the absence of sufficient funds from other sources at least as long as the emergency continues and until we have an up-to-date highway system. Contrary to the general public belief, it is not necessary for an authority to have title to the land and facilities it operates. Title may be in the state, municipality or other public subdivision in which the authority operates. Authorities can and do sell revenue bonds to investors who have rights to revenue but not to the facility itself.

Critics have opposed toll facilities on the basis that the conditions in the metropolitan area, where the problems of congestion are greatest, are not solved by these facilities, and on the theory that revenue bonds carry a rate of interest greatly in excess of bonds backed by the full faith and credit

of the government. Issue must be taken with this point of view. If the facility is designed to be of greatest benefit to traffic, it will go through rather than by-pass the cities. To date many of the most important links in the arterial highway system are the strategic river crossings, generally in urban areas, upon which tolls are charged. These toll river crossings have done more to remedy mounting traffic congestion in urban areas than any other factor. They have furnished new facilities many years in advance of the time in which they could have been built out of normal governmental construction appropriations. Until recently water crossings were built from bridgehead to bridgehead and tunnel plaza to tunnel plaza and the approaches were left to others to worry over. Traffic massed at the focal points. Crossings must from now on extend far inland and merge into the general traffic pattern.

As to the question of interest rates, these depend upon anticipated revenue and upon the character and reputation of those responsible for administration. As an illustration of low interest rates, the Triborough Bridge and Tunnel Authority in New York City refinanced its bond structure in 1952 when it sold a two hundred and fifteen million dollar revenue bond issue at an average interest rate of 2.02 percent.

Much has been written about the forty thousand miles of main arteries called the "interstate system." The construction of this system, comprising about one percent of the road mileage of the country and estimated to carry twenty percent of the rural traffic, would cost at least eleven billion dollars. Included are highways potentially wholly or partially self-liquidating. The present policy of the Congress and the Bureau of Public Roads, which bars the expenditure of federal highway funds on toll highways, should be reexamined. Pennsylvania Turnpike, the first of the modern toll highways, as distinguished from river crossings, could not have been financed without a forty-five percent Public Works Administration grant and a loan from the Reconstruction Finance Corporation. There are many projects on the interstate system other than those which have already been proposed for toll financing which could be built if some federal and state subsidies were made available.

In New York City the Triborough Bridge and Tunnel Authority is using its excess borrowing capacity to build eighty million dollars worth of approaches and arterial connections on the federal aid urban system. It would be equally proper to reverse this procedure and use public funds to subsidize projects which can be shown to be self-supporting to the extent of, say, seventy-five percent of the cost. In an all-out attack upon the highway program, public and quasi-public funds from a number of sources should be considered. Henry Hudson Parkway in New York City was built by using money from seven different sources.

At this point I shall refer briefly to a financial device often suggested and rarely applied in this country to reduce or rather recoup some of the cost of new highways, particularly wide thruways, expressways, turnpikes, freeways and parkways. This is the idea of using excess condemnation on a large scale to acquire strips of land adjacent to rights of way for purposes of resale at higher prices when the improvement is finished and the surroundings have become valuable. There are powerful, and I believe unanswerable, arguments against this. Most state constitutions rigidly limit excess condemnation to rounding out plots so as not to leave odds and ends of unsalable land and to avoid consequential damage. The amount of money which might be recouped by a wide extension of this power has in most instances been greatly exaggerated. Increased surrounding values in any event result in higher assessments and taxes. Last but not least, speculation in land for ultimate public benefit by even the most reliable public officials should not be encouraged. It would certainly lead to widespread suspicion and, human nature being what it is, to irregularities. For all these reasons, this device should not be considered as an important or promising factor in highway financing.

The answer to the big problem of financing the proposed fifty billion dollar ten year program seems to me to be to raise gas taxes in a number of states, particularly the larger ones, increase truck taxes, probably on the ton-mile method,

capitalize considerably more of the present 4.9 cent average state gasoline tax, and segregate a federal three-cent gasoline tax (one cent above the present two-cent tax) together with the present six-cent per gallon oil tax, so as to double the existing federal aid program. A new formula for federal aid is set forth in the table which follows. There would be a great incentive to states and municipalities to do their share if the President were to recommend and Congress were to pass legislation offering such additional aid on the basis of this new formula.

Federal excise taxes on automobiles, tires, parts, gasoline and oil amount to over one and one-half billion dollars per year, most of which is diverted to other than highway uses. Taxes on gasoline and oil seem to be the only practical ones to recommend for segregation. It has been urged in some quarters that the federal government give up all gasoline taxes and thereby leave this field of taxation to the states. It seems unlikely that Congress would do this in view of the fact that there would be no assurance that these funds would go into highways and because of the adverse effect on federal aid, regional planning and ample construction in the less wealthy states. It is essential, however, that highways, because of their present conspicuous inadequacy and their increasing importance in the economic life of the community, be exempted from the economy drive in Congress which rightly has for its aim reduction of unnecessary federal expenditures.

The figures look roughly like this. We need fifty billion dollars over a period of ten years, that is five billion dollars per year. We are presently spending at the rate of two billion seven hundred million dollars per year, or twenty-seven billion dollars in the next decade. This means we must raise an extra two billion three hundred million dollars per year, or twenty-three billion dollars in ten years. After that we must have a continuing program of two billion seven hundred million dollars per year. Tables based on the most reliable figures available illustrating the present twenty-seven billion and proposed fifty billion construction programs follow.

TEN YEAR
HIGHWAY FINANCING PROGRAM

Present Financing

	Per Year (*Millions*)	Ten Years (*Millions*)
Federal Aid	$ 625	$ 6,250
State Highway User Revenue	2,800	28,000
Other Revenue, including Capitalized Tolls of Authorities and similar bodies	225	2,250
Municipal Government Expenditures	1,100	11,000
	4,750	47,500
Less Maintenance and Administration	2,050	20,500
Construction Total	$2,700	$27,000

Proposed Financing

Double the present federal aid allotment to the states, the income to be derived from segregation of a 3¢ federal gas tax plus the present 6¢ per gallon tax on oil	1,250	12,500
Raise average gas tax in 48 states ½¢ and increase truck taxes. State highway user revenue will then total $3,450 Millions annually		
Deduct from this amount $1,400 Millions annually, representing average of 2 cents of gas tax and half of registration fees, capitalize this revenue and issue bonds backed by it		23,300
Remainder of State Highway User Revenue	2,050	20,500
Construct 4,000 miles @ $1.2 Millions per mile with proceeds of revenue bonds of public authorities and similar agencies		4,800
Municipal government expenditures including moderate increase	1,200	12,000
		73,100
Less Maintenance and Administration	2,310	23,100
Construction Total	$5,000	$50,000

The following changes are suggested in the present federal aid program. It will be noted that it is proposed to give proportionately more aid to urban areas. The present provisions for redistribution of federal aid in cases where states do not match their share should be continued and strengthened so as to stimulate action in backward states and speed up the program where there is cooperation.

	PRESENT FEDERAL AID	REVISED FEDERAL AID
Primary - - -	$247,500,000 (45%)	$440,000,000 (40%)
Secondary - -	165,000,000 (30%)	275,000,000 (25%)
Urban - - -	137,500,000 (25%)	385,000,000 (35%)
	*$550,000,000	**$1,100,000,000

(* Does not include Congressional authorizations for interstate system, defense access roads, forest highways, national parkways and park roads, and other special purposes. These programs should be accelerated and increased.)

(** Includes limited but substantial federal aid for urban off street parking and for railroad grade crossing eliminations.)

RAILROAD GRADE ELIMINATIONS A SPECIAL PROBLEM

The elimination of railroad crossings at grade—which is simply the separation of road and railroad by elevation, depression, or parallel side line substitutes, is in many ways a special and separate highway problem.

Here basic responsibility is fixed beyond dispute by fundamental law. It is the highway not the railroad, the car not the train, which creates the hazard and must be primarily responsible for its removal. The prevailing opinion of Justice Brandeis speaking for the Supreme Court of the United States in the case of Nashville, Chattanooga and St. Louis Railway vs. Walters, et al handed down in 1934, states this principle clearly:

> " * * * The main purpose of grade separation therefore is now the furtherance of uninterrupted, rapid movement by motor vehicles. In this respect grade separation is a desirable engineering feature compa-

rable to removal of grades and curves, to widening the highway, to strengthening and draining it, to shortening distance, to setting up guard rails, to bridging streams. The railroad has ceased to be the prime instrument of danger and the main cause of accidents. It is the railroad which now requires protection from dangers incident to motor transportation."

The laws of the several states which are supposed to give force to this opinion vary widely, and still reflect a disposition to penalize the railroads and to make them pay for construction which in most cases benefits them little and cannot be capitalized by them. As a result in many instances the railroads resist elimination orders by every resource at their command because their share is uncertain, often unfair and sometimes exorbitant.

The history of the eliminations of rail crossings at grade in New York State is illuminating. Up to 1925 the Constitution fixed the railroad's share of cost at fifty percent and the state's and municipality's each at twenty-five. By Constitutional Amendment in 1927 the railroad's share remained fifty but the distribution of the other half was to be fixed by the Legislature. Legislation in 1928 made the state's share forty percent and the municipality's ten percent and then in 1929 reduced them to forty-nine percent and one percent respectively. Still the program developed under Governor Smith lagged, largely because the railroads did not have available fifty percent. Then in the Constitutional Convention of 1938 a new and somewhat complicated formula was proposed. It was adopted by the voters and may be summarized as follows:

The amendment placed the entire cost of the elimination squarely on the state and provided that it should include incidental improvements rendered necessary or desirable because of the elimination and reasonably included in the engineering plans therefor. The state, however, was to be reimbursed by the railroad for the entire amount of railroad improvements not an essential part of elimination, and the amount of the net benefit to the company or companies from the elimination exclusive of such railroad improvements, the amount of such net benefit to be adjudicated after the completion of the work as pre-

scribed by law, and in no event to exceed fifteen per centum of the expense of the elimination, exclusive of all incidental improvements.

The new amendment in spite of its complexity has worked well. The railroads no longer spar for time. What constitutes a direct railroad benefit is, of course, debatable and subject to later determination, but immediate financing is now assured. Moreover, in most cases new highways, and especially expressways, thruways, turnpikes and so-called freeways automatically provide over- and underpasses at rail crossings as part of their own independent financing. During the depression, there were limited federal funds available under federal highway laws involving no railroad participation. These have been discontinued except on a matching basis on federal highway routes. Federal appropriations for crossings, including reconstruction of existing crossings and the opening of new ones, on other than federal highway routes should be resumed, because many cities and states cannot afford adequate appropriations for this purpose and more often than not a railroad grade elimination involves a considerable stretch of track and cannot be limited to a single crossing on a federal route. Separate funds for this purpose need not be made available. The present restrictions should simply be liberalized as to grade crossing expenditures on the urban, secondary and primary systems.

Obviously, design standards of rail crossing eliminations should be as high as those of other crossings, and provision for maintenance of train schedules and car movements by temporary devices and detours must be carefully worked out by the most intimate cooperation of railroad and highway engineers. In most instances the railroad must let and supervise contracts since it assumes the major risks.

PARKING AND METERS

Modern urban express routes without stop lights and crossings at grade will go a long way toward removing through vehicles from ordinary streets, but the local street problem will not be solved by new highway construction alone. Without parking controls and ample off street parking facilities, public and private, our urban streets will more and more

become outdoor day and night garages, narrowing and blocking traffic, preventing cleaning and the passage of fire, police and other safety and emergency vehicles, throttling business and residence and eventually driving both out of town into the suburbs and open country. Some decentralization of urban populations is inevitable and in a measure beneficial, but the dispersion which is forced by traffic strangulation and hardening and clogging of arteries and veins is always unhealthy and, if unduly prolonged, fatal. Other factors enter into the diagnosis and cure of midtown and main street decay, but traffic congestion is at the top of the list.

It may be stated without fear of successful contradiction that private capital alone without government aids of one kind or another and supplementary government building cannot solve the parking problem in the average congested urban area. Obviously all new large buildings, residential and commercial, should be required by law or zoning regulations to provide reasonable off street parking and loading facilities, but these rules cannot constitutionally be made retroactive. Sufficient additional off street facilities at reasonable prices cannot in many areas be made self-supporting without inducements and subventions, open or disguised. Wholesale metering is the logical helper. It provides revenue, regulates and cuts down unnecessary and prolonged parking, discourages overnight standing, and drives those who use the streets as garages into off street parking lots and garages built and operated for this purpose. There should also be federal aid for parking along main highways on the federal system.

A parking authority or other agency, if it has the power to install and collect revenues from meters, can in many instances raise enough funds over and above reasonable off street charges to finance all the facilities which private capital with or without tax and other aids cannot furnish. Both meter and public parking charges must be within the means of car owners and users. Another requirement which only government can supply is the power of eminent domain, that is, condemnation to assemble off street plots, and garage and terminal building sites at suitable locations close to meter installations. In the larger cities with rapid transit facilities, increased use of fringe parking on main arteries at the outskirts of the city and close to rapid transit stations should

be encouraged. Such parking lots, if properly planned, constructed and operated, furnish all-day parking at comparatively low cost, thus relieving traffic congestion in the central areas.

Other parking expedients should be tried at the right places and under favorable conditions. For example, there are locations where a city may get bids to acquire land and lease it to private capital for long terms on conditions which will insure construction of garages without public appropriations. Such construction may include other uses. These projects will be upheld within reason by the courts as a public purpose. Here again the public authority device is an excellent one, especially where municipal budgets are tight and the debt margin is shrinking.

In discussions of urban parking there are always advocates of the indiscriminate use of public parks for underground garages, irrespective of local conditions and destruction of recreational areas. Similarly there are constant demands for park space for schools, incinerators, hospitals, opera houses and theatres. There are locations where garages under public parks can be made to work, but the problems are always serious and often unsurmountable. Parks on Manhattan Island for example, are periodic targets of those who are attracted by the lure of free land. Excavation in these parks would be in solid rock, access would have to be through complex mazes of sewers and utility lines, under subways and pedestrian passageways on the bordering streets, necessitating impossible grades and long underpasses. Replacement of planting would require many years and enormous expenditures. Traffic congestion would be increased in the very areas where it should be relieved. A garage under a park or public place may work well in San Francisco and be completely impractical in New Orleans or New York. It is much more economical in such areas to acquire separate sites, properly located, for multi-storied or open deck garages built above ground, or surface parking fields.

SAFETY AND OTHER REGULATIONS

Regulation of highway use and users in the interest of safety, smooth flow of traffic and protection and enhancement of bordering values are most important factors in the

proposed program. Our present regulations are not uniform, but they reflect widely differing standards. Enforcement is usually half-hearted. The record of accidents, with its death toll of almost forty thousand a year, is deplorable and getting worse, perhaps not in the sense of damage, injury and death per vehicle mile, but measured by other yardsticks such as the suffering of innocent people through the carelessness, indifference and lawlessness of others.

Speed remains the greatest enemy of safety. It makes the difference between a fatal or major and a comparatively minor injury. We have no reliable standards governing speed. Every manufacturer, official, owner, driver and bystander thinks he is an authority on this subject. Generally, our speed limits are too high, especially where there is heavy traffic, bearing in mind that police do not arrest nor magistrates and judges convict unless there is an allegation that the driver was going considerably faster than the limit. Thus a forty-mile limit is in effect close to fifty miles, and so on. Recent gruesome accidents have brought about a demand for limits varying with weather conditions. Obviously, open roads call for different regulations than those in cities and metropolitan areas, and those in warmer latitudes must be distinguished from those in the colder ones. Too many manufacturers advertise the speed rather than the safety of their vehicles. If the present accident rate continues, there is something to be said for the suggestion that cars, trucks and buses should not be allowed to be manufactured which can travel more than sixty miles an hour.

In metropolitan areas we shall have to get used to the idea of truck loading and unloading at night and in off hours. Shippers, truckers, warehouse men and merchants, owners as well as the unions will have to be persuaded to go along with reasonable rates at these off hours. Business hours will have to be staggered in the general public interest and precautions adopted against recurring peak traffic and travel loads. The number and size of taxicabs will have to be limited and it may even be necessary to keep all private cars out of some districts at certain times.

Traffic devices such as stop lights, synchronized, progressive and rhythmic movements, white lines and one-way

avenues and streets must be more highly developed and in such a way as to protect the pedestrian who seems more and more to be neglected in the effort to move vehicles quickly. It must be determined where police control of traffic is more effective than administration by a separate department, since the traffic officer with the right to arrest is in the final analysis the key to the success of all regulations including those which are supposed to be automatic.

The maximum size and weight of vehicles varies throughout the nation and there is too much pressure for huge trucks, buses and trailers and too little appreciation of the benefits of small, light taxicabs and passenger cars in cities. Inspection of cars and drivers is good in very few areas, poor or undependable in others, and nonexistent in some of the largest states. Insurance regulations are inadequate in most states. These should penalize careless owners and the courts should impose heavier penalties on flagrant offenders. Reliable interstate records should be established on a uniform basis covering registration, licensing, inspection and financial responsibility. These records would, among other things, catch violators of laws who acquire licenses and registration certificates in other states. The results of such laxity are scandalous and higher standards must be generally established and enforced as an integral part of the program. There is altogether too much selfish visible and hidden opposition to effective remedial state legislation. Effective regulations might well be made an indispensable condition of receiving federal aid.

BILLBOARDS

Any program of highway expansion and improvement, especially one involving new routes and rights of way, which does not face frankly and firmly the menace of indiscriminate billboard advertising will not have sustained public approval. Intelligent women in particular have profound convictions on this subject. Honest public officials of long experience are increasingly fed up with glib assurance of cooperation from billboard companies and advertisers who have little regard for either safety or preservation of the landscape. Parkways are already more or less protected by wide rights of way, state laws, and local zoning ordinances and easements, but most laws governing new mixed traffic arteries including toll

roads have been rigged with weak sign and billboard provisions or stripped of all such regulations.

The billboard companies have shrewdly sought the aid of farmers and other adjacent owners who seize the opportunity to pick up a few fast dollars, and of unions engaged in putting up and painting signs, to defeat regulatory bills and prevent effective administrative rulings. Since there are many other more promising media, advertisers seem much less interested in plastering the highway system with appeals for their wares than the billboard companies claim. In terms of safety and public support, it is essential to curb the billboard interests from the very start. Road building at best brings with it some undesirable features. If every highway is to become just a gasoline gully, those who live and work nearby and those who drive for pleasure and with some respect for scenery, are going to be more and more in favor of putting the new roads somewhere else or drastically limiting their construction.

SUPPORT OF THE PROPOSED PROGRAM

A program of this size and complexity cannot be realized without widespread, continuous and undeviating public support. A single campaign of short duration, no matter how well conceived and executed, will not do. Every legitimate influence, effort and means must be used. The auto industry must play an increasingly important part. The period is over when the manufacturer loses interest when his car, truck or bus leaves the assembly line and the salesroom.

The General Motors Futurama was by far the most popular feature of the New York World's Fair of 1939 and 1940. It was no doubt more stimulating and dramatic than scientific, but it demonstrated beyond doubt the enormous interest of the public in the future of highway transportation. Similar imaginative exhibits should be shown around the country to acquaint the layman who does not read blueprints with the stirring drama of the ten year program and to prove that this is at once the age of urbanism and of pioneering in opening remote and undeveloped areas.

Gasoline, oil, tire and other related businesses should put their shoulders to the wheel. Safety organizations should

increase their budgets and redouble their efforts. Insurance companies should do their part. The press is tremendously important. So are the screen, radio, television and the theatre. If, for example, television with its extraordinary impact were induced to make an intensive presentation of our highway problem, in the way it reported the national conventions and campaign of 1952, support of an adequate program would not long be in doubt. Similarly, elementary schools, high schools, colleges, universities and forums of all sorts should be induced to put this program high in their curricula.

There should be a slogan for this campaign, something like

"Good Roads for Good Cars
Support the Ten Year National Highway Program"

illustrated by clever cartoonists and poster artists.

The Council of State Governments and its affiliated organizations should have a special meeting on this subject with the Commissioner of the Federal Bureau of Public Roads and the American Association of State Highway Officials to agree on the program, and should canvass progress at their regular annual meetings thereafter. It would be enormously helpful if the Governors were to invite to this meeting the Highway Committees of the Senate and House of Representatives for full discussion of federal aid. Similarly, the United States Conference of Mayors should give special consideration to this problem at its next meeting, outlining the responsibilities of municipalities for stepping up construction and their relation to the states on projects involving state and federal aid, and should confer with the Congressional committees.

There must be more annual conventions, more competitions for awards, and more respect shown to those who wrestle with the highway problem. There must be a freer exchange of information, more discussion of difficulties, more inspections of successful installations, and above all better leadership. By such means we can have before 1953 is over general agreement on an adequate program and schedule with enough flexibility to insure the cooperation of the national, sectional and diverse other interests which control our motorized civilization.

2ND NATIONAL AWARD ★ ★ ★ ★ ★



BRIG. GEN. LACEY V. MURROW, U S A F
Fort Benning, Georgia

In any consideration of the problem of "How to Plan and Pay for the Safe and Adequate Highways We Need," it is necessary to set forth and recognize certain basic and known facts; and to be fully aware of those aspects that are not now known. The situation can be likened to a highly involved mathematical equation in which many factors are known, but which, at the same time, contains so many unknown factors that the equation cannot be quickly and easily solved.

Land, sea, and air transportation are the arteries that carry the life blood of the nation. This is true because, in our involved economy, all commodities, and manufactured products in quantities above the requirements of local consumption, are of little or no value unless, or until, they are transported to points where they may be consumed and used.

The relatively great abundance of transportation in this nation has lead us into some wasteful practices and the acceptance of temporary expedients to solve the ills, as they have arisen, of highway, rail, water and air transport. Each of these four means of transportation impinges one upon the other, and the deficiencies of one cannot be permanently corrected without giving some consideration to the problems of the others.

The basic American principle of fair treatment for all in the matter of taxes and regulation is the assumption on which all other considerations must be based. In the past, all levels of government have, at one time or another, followed practices that promoted or favored first one and then the other of the four forms of transport. It would seem that the time has now arrived when it should be possible to reestablish our basic principle of fair treatment to all. Then each form of transportation will, because of competition and proven economic laws and standards, seek its own level. Furthermore, each will then serve the needs of commerce, national defense, and the public welfare in the fields and to the extent to which it is best suited.

Based on the above stated principles, it is now possible to examine some of the facts and known factors of the problem at hand in planning and financing an adequate highway system for the nation. The following statements are true and factual, supported by the available public record:

1. For more than thirty years, the Bureau of Public Roads has handled technical, administrative, and fiscal relationship with the forty-eight states and with foreign governments, in a manner not exceeded in its excellence by any other agency of the Federal Government. With great benefit to all the pattern thus established could have been followed by other Federal agencies in their dealings with state and local governments.

2. The highway departments of the various states are now staffed with highly trained engineers and technicians, fully qualified to plan, design, and build the most modern highways. The overwhelming majority of these men display a devotion to duty and a sincerity of purpose more normally to be expected and found in the priesthood and the ministry.

3. Cities and counties have consistently improved their engineering capabilities, and some of the larger cities and more populous counties retain engineering talent of the highest order.

4. The construction industry in this country today is capable, willing, and able to undertake any amount of highway and bridge construction that can be soundly financed.

5. In the absence of all out war, the steel mills, cement plants, oil companies, and fabricators will shortly be seeking new outlets for their present high-production capacity.

6. Money, available and seeking sound investment opportunities, was never more plentiful. Insurance companies, and the pension or retirement funds of large corporations, are new and potential sources from which economically sound toll bridges and highways might be financed.

7. There has recently grown up in this country a considerable number of consulting firms with much background and experience in highway engineering, traffic surveys, and finance. This specialized knowledge and experience is available when and where needed. The highly skilled and technical services of the Automotive Safety Foundation have been most beneficial in assisting various states to analyze their present highway deficiencies and to forecast future requirements.

8. The National Safety Council has done much, with limited funds, to educate the public and promote highway safety.

9. At Northwestern University the Traffic Institute has been of great assistance to many states and municipalities in the training of traffic officers.

10. It is estimated that there was expended in the calendar year 1952 for all highway and street purposes in the United States a total of $3,800,000,000. In view of the present unsatisfactory condition of a large percentage of the 3,300,000 miles of highways and streets, it is possible to gain some idea of the tremendous problem that is here considered.

All of the foregoing statements are favorable and on the credit side of the ledger.

Now to examine some of the questionable and unknown factors in the equation:

1. There is now and always has been a serious lack of balance in the various states in the matter of highway user taxes or charges. Yet this is a problem that must be left strictly to each state for solution and determination. This condition probably developed from the extensive and conflicting testimony submitted to state legislatures by representatives of various transportation and allied groups. There has been a deficiency and a vast need for factual and current data on which sound legislation on this subject might be based.

Conditions have changed so rapidly that careful studies made even ten years ago are no longer valid. Older surveys and

reports, though made by eminent and sincere men, are of little value as a basis for solving the problems of today.

2. Committees of the Congress and other agencies of government have held hearings on the transportation problem, and have earnestly attempted to arrive at an equitable distribution of highway costs as between the various classes of users. Because of the wealth of conflicting testimony, little of which was truly factual, the tangible results from these hearings have been disappointing.

3. The old and highly important question of maximum weight, height, length, and width of commercial vehicles remains unanswered. This situation has placed the highway engineer in an untenable position. He designs and builds to provide for certain loadings and space displacement, only to find that, by legislative enactment, the structure must carry far beyond its designed capability. The grave question of costs is also primarily involved. The engineer can design and build to adequately support any load that may be imposed; however, his funds are limited and the mileage that is his responsibility is always beyond his means. The highway administrator and engineer is likewise much concerned with the question of who should pay, and how much, for the use of facilities owned and maintained by the public.

4. Safety is another of those intangibles that is difficult to evaluate. Many generally accepted opinions on highway safety do not stand up under careful examination.

Speed is not, necessarily, the major factor in highway fatalities. Slow and careless, or incompetent driving oftentimes is more dangerous and may, indirectly, be the cause of many fatal accidents.

The mixing and intermingling of all classes of vehicles in the same channel of traffic flow is another secondary cause of accidents. This situation is receiving some study, based primarily on accident records of certain well known parkways. The time may come when, in the interest of reducing traffic density and promoting safety, we will build separate facilities for private and commercial vehicles.

5. Safety is inseparably tied to education and enforcement. Much progress is being made in driver education and training programs, especially in the public schools and through such organizations as the American Automobile Association.

The enforcement of traffic laws, ordinances, and regulations has not kept pace with other developments. This condition is due to public apathy and the fact that it is not popular to criticize the efforts or practices of law enforcement officers and agencies. Actually the fault lies, not with the officer, but, with the system under which most traffic officers are required to work. Many states now have state police organizations, and traffic enforcement becomes a secondary responsibility. It is only natural that intelligent and ambitious men should prefer detective work or other phases of law enforcement to the trying, difficult and presently unrewarding duties of a traffic officer.

6. For more than two years there has been a growing anxiety and concern in this nation and throughout the world over the military situation in Korea. During two years of war in that country, the United States Armed Forces has suffered 110,611 casualties, of which 17,445 were killed in action and 12,506 missing. During the same two year period automobile accidents have caused an estimated 76,000 deaths, 4,000,000 injuries and $7,000,000,000 in economic loss. In view of the reasonably accurate statistics quoted above, it is truly amazing that this nation has calmly accepted the loss of life, the injuries and economic loss that has occurred on the highways.

The magnitude and urgency of the matter here discussed leads to the following recommendations, set forth in what is believed to be the order of their importance:

1. Retain the Bureau of Public Roads in its present role, guided by the same sound principles of engineering and administration that have characterized this agency during the past thirty years. As it has in the past the Bureau must continue to be free from political interference and favoritism. It must also be provided with additional funds for research and development.

2. It has been pointed out that basic and current data on many aspects of this problem are not now available. Likewise, the studies and proposed remedies made by both governmental and private agencies are outmoded and have failed of public acceptance. Both these deficiencies can be corrected if one or more of the illustrious philanthropic foundations can be interested in undertaking a truly complete and objective analysis of the problem. It is recommended that such a study be divided into three broad fields as follows:

(a) Regulation.

It will be necessary to carefully analyze the past and present practices of transportation regulatory bodies, both at the federal and state level; and from these studies to draw sound conclusions concerning policies and practices that should properly guide the actions of regulatory bodies in the future. It naturally follows that inquiry will be made into rates, existing laws and the granting of franchises or certificates of convenience and necessity. In this broad field it will also be necessary to examine and evaluate, in light of the public interest, the promotion policies and practices of the Federal Government with respect to various forms of transport.

(b) Taxes.

The whole question of taxes on all forms of transport by Government at various levels should be carefully analyzed in order to properly evaluate a just, fair and equitable tax or charge that should be made against the highway user. Presently imposed overlapping taxes against the highway user leaves him without the information to even approximate the charges that he is paying for the facilities which he uses. In some communities gasoline is taxed four times, by municipality, county, state and federal government. One of the evils of tax overlap, beyond the obvious fact that it costs the tax payer more money, is that it is less efficient for the various levels of government to collect their money through different channels. A considerable portion of the money is being spent in the various mechanics of collecting it. This study will also require investigation into the propriety and extent of securing additional revenue from sources other than the highway user.

(c) Maximum Design Criteria.

It is essential that this matter be fairly and promptly determined, in order that the differential in charges by the various classes of highway users may be justly and properly assessed. For many years the authorized and responsible spokesmen for the military have stated that structures and highways of a design sufficient to properly serve the civilian economy would, also, be adequate for military requirements. This aspect of the study, will necessarily, require equitable findings with respect to maximum weight, length, height and width of commercial vehicles. It is essential also, in this phase,

that much and careful consideration be given to the proper method of collection of highway user charges as between the various classes of vehicles.

The above cited phases of the study are only general in nature, and it is recognized that many other related subjects must be considered. Such a study, as is here proposed, would necessarily inquire into toll roads and toll bridges, and the matter of reciprocity between the states. The present and recommended division of available funds between the states, counties and cities, and the extent to which the Federal Government should aid in financing heavy construction, plus many other issues, are the areas in which we must have current information, facts and sound recommendations.

Talent for such a project is available in the transport industry, the highway departments, and in the transportation, economics, and engineering schools of colleges and universities. Extreme care must be used in the selection of all personnel employed on this work, for the men in responsible charge must be a group whose ability, integrity, and fairness will automatically place their findings on such a high plane that the report will be accepted by the public, responsible representatives of other forms of transportation, and government at all levels.

At first glance, this proposal may appear to be tinged with Utopian ideas or merely wishful thinking; however, throughout our society and particularly in the overall transportation field, the most influential and responsible persons are men with a keen sense of fairness, sound judgment, and interest in the public welfare. Heretofore they have not had the facts on which to base decision and action. There is no way, short of temporary expedients, in which this problem can be solved quickly and inexpensively. Its magnitude alone precludes a tricky or an easy solution, and its importance to the nation cannot be over emphasized.

3. Regional and inter-regional committees should be established; the regions to be determined by logical geographic, traffic flow and trade interest criteria. In the absence of a better solution, the regions as established in the rules of this contest can be used.

The personnel of both regional and inter-regional com-

mittees should be composed of responsible representatives of the public, the Bureau of Public Roads, the State Highway Departments, the Department of Defense, State legislative committees, and such other interested agencies or associations as the Governors of the respective States in each region may jointly agree to be appropriate. It would be the responsibility of the regional committees to be familiar with the present highway net of the region, and make recommendations to the legislative bodies of the States within the region of the general pattern of improvements that would best serve the individual state and the region.

The inter-regional committees would be composed of selected persons from the adjacent regional committees, whose responsibility it would be to advise on proper integration and coordination of routes and improvements as affecting two or more regions. These committees, after proper indoctrination and experience, would prove most helpful in popularizing and advancing the desirable aims of the American Association of State Highway Officials.

Enactment of this recommendation should bring cohesion, stability, and sound judgment to bear on future planning.

4. The Congress and State Legislature should be encouraged to grant as much lead time as possible in the authorization of highway expenditures. Year to year appropriations are not a sound basis for proper planning purposes.

5. Real effort should be exerted to bring about some semblance of uniformity as between the states in the licensing of drivers, and the traffic laws under which the vehicles may be operated. In no other form of interstate travel is the operator of a conveyance faced with such involved and conflicting requirements. The operator of a train, a steamship or an aircraft, adheres generally to the same standards of operation and performance throughout the entire continental limits of the United States. Not so with the operator of a motor vehicle. In the same geographic area he is confronted with forty-eight different state traffic laws, and the varying and conflicting traffic ordinances of thousands of cities.

If some order can be brought out of this chaotic condition, it is hoped that all of us will accept the license to drive a vehicle as an earned privilege, and not as an inalienable right that should not be taken from us.

6. Proper enforcement of laws pertaining to highways and traffic will never be adequate until it is generally recognized that it is a special type or kind of law enforcement requiring highly trained and competent men. This work must be their sole duty, except in times of emergency. It seems logical that they should be an operating part or division of the State Highway Department.

7. Safeguards must be established to protect qualified engineers, technicians, and other employees of the State Highway Departments in the matter of their earned promotions and continuance of employment. A few states have already protected their investments, in the experience and training of personnel, by means of state civil service legislation. The science and art of highway construction and maintenance has long since ceased to be a field in which the public can afford to employ novices or political hacks. The importance of this recommendation is emphasized by the fact that there is now a shortage of engineers, and forecasts made by the Joint Engineers Council, based on college and university registration, are not encouraging for the future.

The tremendous amount of money expended annually requires that only qualified personnel be retained. This highly specialized branch of the engineering profession must be stabilized, and afford proper compensation, so that the engineering schools of colleges and universities will again voluntarily recommend this field to their outstanding graduates.

8. Needed highway construction offers one of the most economically sound methods of stabilizing employment and many segments of industry in times of distress. Proper advance planning is, therefore, an essential and necessary function of all highway building agencies.

In summation, the capabilities for necessary planning for the safe and adequate highways we need are now available. Qualified personnel, with the technical knowledge and experience, are willing and able. The enactment of certain state legislation would facilitate and speed this planning phase. However, the real "know-how" and basic data has been accumulating for many years and can be activated toward completed plans in a very short period of time.

It is in the field of finance that we encounter our greatest deterrents and difficulties. The colossal amount of money now

being expended, the larger requirements of the future, and the complexities of our present methods of financing highway construction, all point to the necessity for more current and accurate data. It is true that there is now available a vast wealth of statistics and general information on this subject. In the main, however, it has not been fully and currently analyzed and evaluated. Also some of the agencies and individuals who have previously wrestled with this problem are, to some extent, suspect in the public mind. In some instances it would appear that they started with the answer, and thereafter labored mightily to justify the answer.

The source of the funds necessary to accomplish the work already outlined is of utmost importance. It is believed that the highly respected philanthropic foundations are the only sources of revenue that can be fully accepted as being entirely free from partisan or political considerations. It is again emphasized that there is no quick, inexpensive or short-cut solution to this problem, that will stand up over any appreciable length of time.

Present unsatisfactory highway conditions, the widespread desire for improvement, and the basic character of the American citizen, all insure that adequate funds can be raised without much difficulty, once the tax payer is convinced that the portion of the cost that he is asked to pay has been arrived at fairly, honestly and without prejudice to other groups and interests. He is, in all justice, entitled to a current, accurate and understandable explanation. This paper outlines one method by which this desirable end can be accomplished.

3RD NATIONAL AWARD ★ ★ ★ ★ ★



CLAUDE A. ROTHROCK
Charleston, West Virginia

FOREWORD

This essay is submitted as an entry in the GENERAL MOTORS BETTER HIGHWAYS AWARDS contest. The subject of modern highways, including the engineering and financial aspects, with the wide range of subsidiary phases and their impact upon the National economy, is so vast and complex that any discussion as short as this must necessarily omit much of importance. Only those items of greatest significance are considered, and they briefly.

Where figures are quoted they are the latest available at the time of writing, but which in the interim may have been supplanted with others more accurate or of a later date.

The suggestions are offered upon the supposition that the administrations are properly organized for most efficient action, and are free of politics. Where this is not true, preliminary corrective measures will be required.

The methods of financing suggested here are not new or novel. They are generally accepted as sound methods of proven worth. What is new is the suggestion for a genuinely concerted effort, by the divergent national interests now working at cross purposes, accompanied by a reconciliation of their differences. If this can be achieved, and it must be, the solution to the highway problem will come almost automatically.

"I CAN SOLVE ANY PROBLEM, EXCEPT THOSE THAT AREN'T ANSWERED AT THE BACK OF THE BOOK."

MARK TWAIN

INTRODUCTION

Probably no factor of the growth of the United States has had such a profound effect upon the economic welfare of the country and its citizens as transportation. Transportation alone made possible the expansion of this country from the first few scattered original colonies, (themselves only made possible by overseas transportation) to the present vast and far-flung, albeit closely united, aggregate of economic relationships which comprises our nation. As new methods of transportation have been developed, and communication made easier, so has mankinds existence been made more fruitful and satisfying.

Of the present day methods of transportation that by motor vehicle is one which, although a development of only the last 3 or 4 decades, probably has touched the lives and more greatly influenced the economic and social welfare of more people in the United States than any other single factor in the country's recent history. Today motor vehicle transportation is one of the most important components of our nation's economy.

IMPORTANCE OF MOTOR-VEHICLE TRANSPORTATION

Consider these facts: There are more than 3 billion miles of rural roads and 319 thousand miles of city streets in the United States today. There are now more than 50 million motor-vehicles using these highways, of which more than 9 million are trucks and busses. Annually these vehicles travel 340 billion passenger miles, and carry 130 billion ton miles of long-range freight. This is twice as much traffic as was carried by motor vehicles 15 years ago, and the traffic is increasing steadily at a rate which will produce double the present volumes in the next ten to 15 years. There is one passenger car for every 3.5 persons and one truck for every 18 persons of our population. One worker out of seven gains his livelihood from some branch of automotive transportation.

The figures of the financial outlay involved are equally astonishing: Retail sales of automotive products alone was reported at $26 billion dollars in 1948 and it is estimated that the cost of the vast array of businesses and services which

constitute motor vehicle transportation amounts to over $40 billion dollars annually—more than one seventh of the national economy.

LACK OF BALANCED SERVICE

In spite of our growing dependence upon motor-vehicle transportation, however, we find that, within its own boundaries this industry is probably the most unbalanced service ever to exist in such tremendous proportions.

The reasons for this situation are several. In the first place highway engineers of the 20's and 30's failed to foresee the tremendous developments that would come as a result of their work, and it was not until the beginning of the last decade that the seriousness of the situation began to be actually realized. By the time the engineers discovered the extent of their predicament, the crisis of World War II forced road construction to cease. The demands for the movement of goods by motor vehicle, however, reached new heights during the war period. In the meantime the inflationary forces of the war, and its aftermaths, have increased the costs of highway construction to more than double those of the pre-war period; and, although the motor vehicle owner has been willing under the compulsion of these same forces of inflation to pay the resulting higher prices for new and improved vehicles, equipment and other things necessary to his motor-vehicle transportation, he has successfully resisted increases in a similar ratio in the license fees and fuel taxes considered necessary to finance a proper highway construction program.

In the meantime, of the elements of which the industry is composed, the vehicles themselves, both passenger cars and trucks, have been developed to extremely high capacities for performance and efficiency, and the present trend is for still greater advances in speeds, power, load capacities, etc. At the same time, the appurtenances to the motor vehicle such as fuel, tires and all the sundry materials and services necessary to its top performance, have likewise been improved in a trend paralleling the development of the vehicles. But the element of highways which these vehicles must perforce use has not kept pace with this trend for improvement and here lies the cause for the major of the ills besetting the motor vehicle transportation industry.

A COMMON MISUNDERSTANDING

There is one important fact often obscured in the current debates about roads. In general the country's highways are now in better physical condition than they have ever been. As a general statement it truthfully can be said, at least of the main road systems in each state, that:

(a) There are more miles of paved road.
(b) The pavements are as wide or wider than in any previous period.
(c) The surfaces are as smooth or smoother.

In other words, the present lack in capacity of our highway systems is not so much due to actual physical deterioration of the road plant as to obsolescence because the geometric features of yesterday are inadequate under the steadily increasing demands of traffic to today for service beyond the systems inherent capacities. Thus, it can truthfully be said that, for the traffic conditions for which they were built, our roads are better than ever. But maintaining these roads in such a serviceable condition has been done at the expense of considerable needed new construction, and under any amount of maintenance they still remain geometrically deficient. Because this fact is frequently overlooked, highway administrators are as frequently charged with a laxity of which they are not guilty.

A NEW CONCEPTION REQUIRED

In any attempt to analyze the ills affecting motor-vehicle transportation the analyst should first try to examine individually the various component services that go to make up the industry. Such an analysis has been made by Wilfred Owen in his excellent book: "Automotive Transportation Trends and Problems," in which he indicates that the difficulties confronting the industry have been basically caused by a lack of recognition on the part of motor vehicle owners in particular, and the public in general, of the fact that an owner, in making an outlay for any of the various goods and services necessary to the use of his car, in reality was purchasing not just such an individual item of goods, but actually an element of his transportation.

Of the earlier stages in the development of automotive transportation, Owen said:

"Better and cheaper vehicles, tires, fuel and other industry products were provided simultaneously with public improvement of vast mileages of highways. Costs of transportation continued downward as the speed, comfort and reliability increased."

Now, however, the trend is different. States are finding themselves unable to finance highway improvements up to the increasing standards demanded by the vehicles which use them. Problems of congestion are increasing, not lessening, and as our roads and streets become increasingly inadequate there is a corresponding tendency for vehicle operating costs to rise. When road standards are low, transportation costs are high because of increased gasoline consumption, tire wear, accident costs, and other outlays thus made necessary.

In truth, motor-vehicle transportation is the end product of the country's greatest combination of economic activities, and the final resulting service, according to Owen:

"involves not merely the great assembly plants manufacturing automobiles and the raw materials and parts industries which supply them, but the production of petroleum and tires, the provision of streets and highways, the financing and insurance industries, and a vast number and assortment of retail trade and service activities."

SOME OBSTACLES TO COMMON AGREEMENT

Obviously of this vast enterprise it is impossible to separate any of its many component elements for individual treatment or exploitation without such action having a far reaching effect upon the whole industry. Nevertheless there are steadily increasing efforts for such individualism, and in this self-seeking is found the principal obstacles in the path of a solution of the industry's problems One bit of evidence of this form of obstruction is found in the existence of a multitude of associations, organized on a national scope, most of whose headquarters is in the Nation's capital, from which is issued a constant stream of literature intended to influence matters concerning road legislation and research. (See Appendix.)

The claims of the spokesmen for most of these organizations is that their aims are altruistic, that their operations add

to the public good, and particularly benefit the motor-vehicle operator and the transportation industry. As a matter of fact, it is apparent that all but a few of them, while making such claims, actually have the primary aim of securing some special benefit or preference for themselves, or their supporters, such as the avoidance of taxes, etc., and, in many cases, the aim of self-perpetuation.

EXAMPLE OF APPROACH

Despite of this situation there has still been a considerable amount of unbiased thinking and analysis of the highway problem by less slanted organizations and individuals. The upshot of most of it has been the conclusion, or what may more aptly be termed "inconclusion," expressed by the late Roy Crum, Director of the Highway Research Board when he said:

> "To visualize the whole picture at once has already given me mental indigestion."

A rather comprehensive outline of the complexity of the highway transportation problem has been written by Richard M. Zettel, Research Economist for the Institute of Transportation and Traffic Engineering of the University of California in an article "Highway Transportation Economics" published in the August 1952 issue of "Public Roads."

Another valuable contribution of factual data is contained in the recent statement submitted by Mr. Thomas H. McDonald to the Subcommittee on Domestic Land and Water Transportation of the Committee on Interstate and Foreign Commerce, United States Senate; later published under the title: "A Factual Discussion of Motortruck Operation, Regulation and Taxation."

The publications of the Highway Research Board are filled with similarly valuable data. Lack of space here prevents mention of the vast accumulation of unnumbered articles presenting factual material and results of unbiased research on the subject. Many tons of paper have been covered with millions of words contributing facts, viewpoints, opinions and in many cases, special pleading; and yet no really scientific or equitable solution is in sight. About the most that has been deduced from all this available but undigested data up to now

is that still more study and research is necessary before we can get the final answer.

SOME UNANSWERED PROBLEMS

Considering the length of time in which the problems affecting the highway economics of motor-vehicle transportation have been arising it is surprising how few of them have really been solved. Considerably more progress has been made on strictly engineering problems than any other branch, although the knowledge came late for application to a vast mileage of construction. There are tremendous problems of finance and economics remaining yet of which a final solution is vital. Until they are resolved the industry will continue to operate under the present great restriction on its normal expansion.

One of the toughest and most important of the many problems so far to defy a solution acceptable to motor vehicle users and road builders alike, is that of an equitable division of the costs of furnishing highway service between the different classes of users. In fact, for this question there is not even agreement as to the theory to be applied.

Another problem of equal importance is the question as to the best method of collecting these costs.

THE "TRUCK PROBLEM"

The above mentioned problem of a just allocation of highway costs among the different classes of users refers to what is generally known as the "truck problem." It is only in the last few years that this problem has come to the forefront as one of the prime subjects in any discussion of highways. From a modest beginning as an insignificant proportion of the total traffic, in volume or weight, in the 1930's, heavy commercial vehicular traffic has leaped into the position today of one of the most important factors in the movement of the nations freight. Its growth has been phenomenal and one of the most alarming characteristics of the highway picture.

For the most part, todays trucks are travelling on roads and streets originally designed and constructed for yesterdays passenger cars. Naturally the surfaces of many of these highways have failed structurally under such an unforeseen

burden, and this has created one of the most controversial issues of the motor-vehicle transportation problems. Attempts at solution have consisted principally of legislation by the States aimed at limiting the loading of axles, as recommended by the American Association of State Highway Officials, a policy promulgated by the Bureau of Public Roads.

There is an understandable attitude of resistance by the trucking fraternity against restrictions which they feel are hampering the complete normal development of their industry. They rightly believe that their service has contributed immeasurably to the economic welfare of the nation through the distribution of goods to an extent that would not otherwise have been realized. This is undoubtedly true, but the question of whether the benefits thus reaped will offset the liabilities accruing because of increased congestion and higher maintenance, construction and reconstruction costs of the highways is still unresolved.

The trucking industry, to the extent that is represented by its national organizations, expresses itself as being not only aware of the seriousness of its dilemma, but willing to contribute to the proven increased cost of highways in a measure scientifically determined as equitable. The application of axle weight limitations receives heavy opposition from the truckers, and large groups of them are constantly working to obtain legislation for increased axle weight allowance and, to nearly as great a degree, a reduction in license fees; an attitude somewhat contrary to the expressions of their national representatives.

What should be done in this matter is to continue the research that already has begun toward a solution of the problem, with an effort to conclude it promptly as is possible, to the end of correlating the costs of vehicular operation under varying loads with the cost of constructing and maintaining roads for such loads in order to determine the point of economy —the lowest combined total per ton mile of transportation. This determination should be made the basis of an equitable and acceptable tax rate.

In the meantime it is suggested that a period of moratorium be adopted on questions of truck weights until they can be settled on the basis of facts determined by research.

IS THERE AN "EASY" SOLUTION?

With all the misconceptions that prevail about our highways, and considering the tremendous difficulties that must be overcome to achieve an equitable solution, the majority of those who are interested but are not familiar with the actualities of the situation may well ask: Is there any formula that will afford quick relief? The answer is NO. There is no wizardry that can produce highways overnight, and without the burden of necessary cost. This does not mean, however, that the country must necessarily continue indefinitely in the muddle caused by its own misthinking.

A NEW CONCEPTION NEEDED

Highway administrators believe the answers to their problems should begin to be obvious to the vehicle owner when he learns to think, as he should, in terms of *total* costs of his transportation; and that if he does this, he will come to realize that of every dollar he has to spend for automotive travel, a larger proportion should be spent for the element of highways in order to achieve the logical economic balance with the other elements of cost and thus secure the lower total costs which should be the ultimate goal of the industry.

This is one conception which must prevail before any equitable solution is possible: the road user rather than pleading for special treatment favoring of his own immediate personal interest, such as an immediate reduction in his user tax, should take a larger view and begin to analyze the problems of motor-vehicle transportation as a whole integral industry. Only by this attitude can he halt the influences that now are interfering with the full potentiality for service and hindering the nation's economy.

Clear thinking, and the application of sound economic principles, must be substituted for the prevalent wrong thinking and the search for illusory panaceas.

PEOPLE MUST BE ACQUAINTED WITH THE FACTS

One of the preliminary requisites most important to an intelligent attack upon the highway problem is a unanimity of opinion by the people. The general public must be brought to a realization of the seriousness of the situation and of the

necessity for a solution, or the eventual consequences of indifference. For this reason the first step toward the solution, and the one upon which the success of all future steps will depend, is the accomplishment of an awakening of the public to the realities of the highway crisis. The people must be made aware of the facts. This having been done, a popular demand for definitive action will certainly follow, and a genuinely united demand for action will not suffer resistance.

Undoubtedly the best promotion agency for this job of education would be the joint effort toward this single purpose by all the many and various trade and other organizations whose primary interest is in some component element of motor-vehicle transportation. They should be asked to forego their individual aims and efforts until such time as this bigger and more essential job is accomplished. The ends thus jointly obtained would eventually be to their individual advantage for subsequent exploitation.

A beginning has to be made, so it is suggested that the associated organizations of the motor-vehicle manufacturers be the first to pick up the ball in an effort to persuade the other organizations existing for the purpose of influencing thought on motor-vehicle transportation to join with them in one big centralized joint council, formed for the specific purpose of acquainting the public with the intolerable highway situation, one thing upon which most of these organizations agree.

Beyond doubt such an effort, by enlisting the aid of all the nation-wide networks of available sales and service agencies and other organizations that could be thus subsidized, would be crowned with unquestionable success. It probably would involve the directed efforts of most of the one in seven persons of our population who gain their livelihood from motor-vehicle transportation. How could such a united undertaking fail of success? If a fervor for adequate highways could be induced to equal that which existed in the 1920's when the legislation and other moves toward the acquisition of good roads were "whooped" through with practically no opposition, then today's task will be a long way toward the desired goal.

SOME BASIC FACTS

Another preliminary requisite to a successful conclusion is a recognition by all concerned that, in considering the

problem of how to pay for an adequate program of highway construction, there are two hard, inevitable facts of finance that must be incorporated in the analysis:

(1) Highway construction costs today are more than double what they were a decade ago. The situation is, of course, the same as that found in all other industries affected by the inflationary trends of the times, as it is reflected in the costs of the other elements of motor-vehicle transportation—the vehicle, fuel, services, etc.

(2) The people will ultimately have to pay the cost of any highway program. No matter through what agency the work is financed, the inevitable process of tax incidence will shift the burden along until eventually it comes to rest upon those who buy goods and services made available by highway transportation. There is no magic formula that will prevent this working of economic law.

Despite this inevitable shifting, however, the tax burden necessary should originally be laid immediately upon those whose benefit is primary—the highway users.

NOT ONE, BUT MANY PROBLEMS

Yet another necessary correction to the present trend of opinion is to obtain recognition of the fact that the problem of constructing and financing adequate highways is not solely one big nation-wide headache capable of remedy by a single huge prescription, but a combination of 48 individual headaches requiring in part, at least, a separate course of treatment for each. This is principally caused by variations in the constitutional provisions of the individual states, as well as by variations in the financial situation and abilities of each, or perhaps some other peculiarity. For these reasons, then, the design of an attack upon highway problems must, in greater or less degree, be modified for application to each state.

FEDERAL INFLUENCE

One of the major decisions which should be made preliminary to, and part of, a concerted attack is a determination of the future policy of the Federal Government's interest in

highway construction; whether to continue, as at present, a policy of Federal aid to the States requiring matching of funds, or whether some alternative system of participation in highways is warranted in view of the present circumstances. There are some who believe all Federal aid to states for any purpose is unwarranted, but surely no one can gainsay that Federal aid for highways has been of inestimable value in the past by having stimulated highway construction in areas where action would have been extremely slow but for the government advocacy. In the pioneering stages of highway promotion there is no doubt as to the benefits of Federal aid. The influence of the Federal government in setting up progressive engineering and construction standards has been entirely good, and the Federal agencies have pioneered in the field of highway research, where its leadership has been of incalculable benefit.

FEDERAL INTERSTATE SYSTEM

One of the more forward looking actions by the Federal government was contained in the Federal-Aid Highway Act of 1944, requiring the designation of a National system of interstate highways, not to exceed 40,000 miles, which would unite the systems of the states by a network of those highways chosen for their particular interest to national transportation for commerce and defense. This system consists at present of 37,681 miles of the nations principal highways connecting the principal metropolitan areas. 2882 miles of the systems are in urban areas, the rest in rural. The system comprises 1.1 percent of all rural roads but carries approximately 20 percent of all rural traffic. The designation of the system has received almost unanimous approval by the States.

Of considerable less popularity in many states, however, was the action by the Federal Government initiating Federal aid for secondary roads, which step was felt, by many state governments, to be an intrusion into fields which should remain under purely local control. The concensus has been that the increase of Federal grants for this purpose could better have been given to the more important traffic carriers, the Primary systems, rural and urban, with a resulting greater aid to transportation.

FEDERAL TAXATION

Another element which has adversely colored the picture of Federal aid to highways is in the field of taxation. When Federal aid was first initiated there was no Federal tax on motor fuel, which since 1919 had been developed as a source of income for, and considered a prerogative of, the states, who exploited the field from the beginning for the benefit of highways. Since then some states have broadened the use of the fuel tax to cover other governmental purposes, but in the main fuel taxes have been considered by both, the states and the highway users, to be a highway use tax which should be dedicated to highway purposes. In many states its diversions to other purposes has been constitutionally prohibited, and there is a continuing effort, with some promise of success, to extend this prohibition to others.

When the Federal government first instituted its fuel tax in 1932, it was a moderate amount in an effort to tap a source of income for emergency purposes. Although it was a glaring example of double taxation the claim was made, when the Federal tax was initiated, that the total amount of Federal aid to highways exceeded somewhat the collections from the tax. The argument was often advanced that the tax acted somewhat as an "equalizer" of the disparity between the financial ability of States, whereby the income in the few of the richer states, where the collections exceeded the Federal Aid allotment, was distributed to the many states where the collections were less than the allotment.

This argument may have pleased those States that thus benefited, but as the Federal tax grew, both in rate and total collections, the picture changed. It is presently apparent that the collections of the Federal tax now exceeds the allotment of Federal aid for highways in all but a few of the states, and the total collections is considerably more than the total Federal aid.

There is a strong feeling that the fuel tax, either as collected by the States, or the Federal government, should be considered as dedicated to highway purposes, particularly in view of the present highway deficiencies. The question is asked: Why should the road systems suffer from a diversion of a type of tax which only their very existence made possible?

There are many other Federal taxes which, along with

similar taxes laid by the states, are placed directly upon the highway user. It has been reliably estimated that taxes amount to an average of 29 cents out of every dollar a buyer spends for a new car. Some of this amount is not caused by duplicate taxes, and some may be warranted, such as a property or income tax on the dealer or owner, but in the main, in addition to his ordinary share of taxation, the road user seems to have been singled out to carry an unfair share of the general tax burden which is not returned to him as an element of his transportation. Generally the State taxes him under the "benefit" theory, and the Federal government lays a duplicate tax on the "ability-to-pay" theory, or, more truthfully on the "ease of collection theory."

The effect of all these taxes is to penalize and discourage motor-vehicle transportation, especially the element of highway construction, at a time when it should be encouraged. What to do about them is a moot question. Those of which the reason for being lies solely in their productiveness and in the ease of their collection, and not in any theory of benefits or privilege, should be laid elsewhere or returned in services which directly benefit the class upon whom they are assessed. This is a good argument for increased Federal aid.

FEDERAL AID POLICIES

From the foregoing it is obvious that the present policy of Federal aid is not sufficient or sound, when, of Federal taxes on the highway users amounting to a total of approximately 1 billion 600 million dollars annually, only 500 million are returned as aid to highways, and then on condition of a like amount from the States. There are several alternate policies which would be more equitable:

(1) Federal aid should be increased to an amount which would at least equal the amount collected by the government from fuel and other taxes paid by road users. This is the minimum equitable policy.

(2) The Federal government should take over responsibility for construction of the Interstate system. The fuel tax collections along now amounting to 550 million dollars annually (and expected to increase each year as it has in the past) would readily amortize the 11 billion dollars required for this purpose.

(3) The Federal government should abandon the field of taxation on motor vehicle users, or at least motor fuel taxes, thus permitting the States to increase their taxes by a like amount. The resulting increased income to the States should, of course, be dedicated to highway purposes.

(4) As the best service it could render to highway construction the Federal government should:

(a) Abandon the field of taxation as suggested in (3) above, and also

(b) take over the responsibility for construction of the Interstate system as suggested in (2) above.

This latter policy is particularly warranted at this time when it appears that spending for defense purposes has reached its maximum, and is expected to begin to decline in the future. The policy would provide a cushioning effect for the economic disruptions certain to follow a decreased Federal defense spending program unless the reduction is made gradually.

SOME GENERAL SUGGESTIONS

Nothing created by man is permanent. Along with all the other things which man uses for his everyday requirements of existence and pleasures, his roads wear out, and must be replaced to maintain a continuance of their utility.

Road life studies are available which indicate the probabilities of the necessity for future road surface replacements, and these reveal that within a ten year period about 44 percent of the nation's existing high-type road surfaces will be ready for retirement; about 74 percent of the intermediate type surfaces and about 94 percent of the low type surfaces also will be worn out.

To prepare for this eventuality and provide for a continuance of service from highways for motor-vehicle transportation requires that careful studies must be made by the individual States to provide a program and determine a sound method of financing replacements and necessary expansions. Undoubtedly such a program will call for increased user taxes, which in the early stages, most likely and logically will be in

the form of additional fuel taxes. This probability requires that there should be made an investigation into the effect of the total cost of fuel, including the tax, to avoid the possibility of a total cost per gallon that will cause a resistance to its use and a diminishing return. To achieve this study means that the petroleum interests, as one of these now advocating an absolute policy of no further fuel taxes, must co-operate rather than continue a policy of continuing a resistance not factual or based on sound economics.

With the answer to the question determined, taxes may be laid in an amount which, added to the other costs of fuel, will total less than the determined critical cost. It is here assumed that this cost has not been reached in any State, considering as proof the demonstrated willingness of users to pay increased costs of other necessities for motor-vehicle travel. As an example, the willingness of motorists to pay toll charges which are the equivalent of a tax of 15 cents or more per gallon of fuel would indicate that the maximum critical tax rate on fuel has not yet been even approached.

NEEDS STUDIES

Each state should determine its own needs based upon an engineering-economic study of all the public highways and streets which form a part of its transportation system. Several such studies have been made recently; they should be made in every state.

As assessment of the condition of each section, of each classification of highway should be made; along with an estimate of the total cost necessary to bring the whole system up to adequate standards. A program of construction should then be laid out to achieve these standards in as short time as is consistent with the State's possible financial ability. The plan should take into account standards of tolerability, and be based upon an intelligently arrived at estimate of each highway section's sufficiency upon which to base priority of construction.

FINANCIAL CONSIDERATIONS: PAY-AS-YOU-GO VS. BORROWING

With a plan of construction and its estimated cost determined by each state, then the tax rate may be set which

will accomplish the program. Payment for the program could be done by several different methods. Where a 10, 15, or 20 year program will accomplish the adopted plan without undue restrictions on road use, then the so-called "pay as you go" plan may be chosen by which current work would be paid for out of current income.

The term, "pay as you go," has a false connotation. The "pay as you go" plan is in reality a "pay before you go" arrangement, since the cash is collected before the facility is made available. The principal, and probably the only, virtue of this method is the avoidance of interest charges. Whether this could counterbalance the necessity for highway users waiting for the facilities is a debatable question.

A much preferable financial arrangement generally is that of borrowing the money necessary for the program through the issuance of State Bonds, of which the interest and repayment of principal would be made out of future taxes on the highway user. Thus the accomplishment of the plan would be realized much sooner than by the so-called "pay as you go" method, and in fact, payment would be made by the current users of the highways, a true pay-as-you-go. Other advantages such as elimination of higher maintenance costs for the replaced facilities, would accrue to this method.

One of the principal advantages of the bond issue method is that the tax rates, methods of collections, and the basis of their allocation among the user classes can be changed as found equitable from current research, thus correcting inequities as they are discovered without endangering the future of the program.

GAS TAXES AND MOTOR-VEHICLE LICENSE FEES

With an equitable basis determined for distribution of highway costs among the various user classes, then the amount and method of collecting these costs must be chosen. This requires that a comprehensive motor-vehicle use study be made, so that a license fee may be set for each vehicle of each class of user that will equalize the receipts from the fuel tax received from each class, and make the total of the fuel tax and fee equal that class's responsibility. Once such a study has been made it should be kept posted to reflect current con-

ditions so that changes can be made in license fees as frequently as may be required to assure the continuance of an equitable distribution of the burden.

Too frequently license fees have been established as the result of compromise, or comparison of a schedule with those of other states, rather than on engineering economics based on factual information.

TOLL FINANCING

In recent years there has been a trend toward the financing of roads by bonds repaid from toll charges. Apparently those toll roads already in operation are successful ventures as far as they are individually concerned, but the current tendency to apply this method of finance is fraught with danger. Ultimate justification for toll roads will only come if the estimates of income made in advance are found to be accurate and if they fit in well as a supplement to the free systems without endangering the free highways usefulness. Toll road financing is only warranted where traffic is heavy and trips comparatively long. They are of no value to the shorter trips that will remain to use the free competitive road. As has been stated elsewhere, the toll charges of about 1 cent per mile approximates an extra fuel tax of about 15 cents per gallon, and if this amount were collected for free roads of equal usefulness, they could be readily financed thereby without the extra cost of the higher interest charges and administration.

WHAT WILL IT COST?

The most recent estimate of costs (1951) of improvements needed on the Federal-Aid highway systems in the United States is as follows, in approximate figures: (taken from testimony presented to the US Senate hearings on highways, 1951, by B. D. Tallamy, President of the American Association of State Highway Officials)

Federal Aid Primary System - - - - -	$15,266,235,000
Federal Aid Secondary System - - - -	8,458,900,000
Federal Aid Urban System - - - - - -	8,282,110,000
Total - - - - - - - - - - -	$32,007,245,000

Of this amount, approximately $11,000,000,000 is for the Interstate System.

For the part of these systems which lie in West Virginia, the cost was estimated as follows:

Federal Aid Primary System - - - - - -	$ 453,831,000
Federal Aid Secondary System - - - - - -	516,682,000
Federal Aid Urban System - - - - - - -	201,820,000
Total - - - - - - - - - - - -	$1,172,333,000

Of this amount, approximately $140,913,000 is for the Interstate System. Of the total of the FAS estimate, $293,310,000, or about 57 percent, is for roads on the State Secondary System, leaving $223,370,000, or about 43 percent of the FAS, for roads on the State Primary system.

Assuming that the Federal Government take over the full responsibility for construction of the Interstate System in West Virginia, the remainder of the estimated cost allocable as the joint responsibility of the State and Federal Government is found to be $1,046,126,000. Of this amount $752,816,000 is on the State Primary and $293,816,000 is on the State Secondary.

Is this too great a burden for the State to carry alone? The answer, of course, remains to be determined in the light of a detailed study and analysis as recommended hereafter. In the first place, the estimates of cost were made on the basis of the application of the A.A.S.H.O. standards, as contained in its published policies, for double the present traffic in all cases. Naturally, a doubling of the traffic on many of these sections, especially of the Secondary system, is not to be expected for at least 20 years.

Based on a 10 year program for the entire outlay, we find that the average annual expenditure necessary to accomplish that part of the program consisting of the State's primary system; less the estimate for the sections on the Interstate system, amounts to approximately $69,000,000 annually. To include that part of the Secondary system which is on the FAS, the total annual outlay necessary over a 10 year period is found to be approximately $100,000,000.

A measurement of the sufficiency of the highways must be made to determine the degree of necessity for construction and priorities, from which it is probable that the necessities for a 10 year program of construction could be shown to

require about half of the above amounts annually; about 35,000,000 per year for the Primary system alone, or 50,000,000 per year to include the Secondary system.

If the Federal government should relinquish the field of the gasoline tax, it is fairly obvious that the State, by levying an additional tax on fuel, and with an "across-the-board" increase of licenses (pending the results of a scientific study of license fees), could carry this burden handily by an issue of bonds.

The details of terms, interest and coverage are beyond the scope of the present discussion. It is probable that a similar situation may be found in each of the other states. It is not proposed that the initial tax or method be considered the final answer. Rather the subject of taxation on motor vehicles should be kept in a constant state of inquiry as to the warrant under current circumstances, and continuing research.

RESEARCH

There is a tremendous lack of factual data concerning the highway problem, particularly in the realm of traffic operations, economics, finance and administration. At present practically the entire burden of highway research is carried on by a few organizations, principally the Highway Research Board and the Bureau of Public Roads. Most of the field work for research is done by committee members whose principal job is in the field of practice rather than research; so the research gets only what time and effort is left over from that necessary for the "bread-and-butter" jobs.

Research should be undertaken and carried through to the conclusion by men especially assigned to the work as a full time occupation. More highway research is needed, and to get it done promptly and expeditiously, all highway administrative organizations must devote a greater part of their funds to the purpose.

ENGINEERING AND CONSTRUCTION CAPACITY

At present there is a shortage of adequately trained highway engineers. In view of this, and considering the possibility that most contractors are presently engaged in construction work for defense, there is doubt that a suddenly accelerated highway construction program could be efficiently handled.

Temporary shortages of equipment and materials may also act as a deterrent.

These shortages probably will make it necessary that a highway program be initiated gradually rather than suddenly. If the hope of some economists that Federal defense spending is due for a reduction in the near future, then the highway program will be most timely and furnish a cushion, by absorbing the engineering and construction capacity now engaged in defense work; an ideal situation. Otherwise the highway program will have to be fitted in with the Federal expenditures for other purposes as best it can be, with extreme care being taken that the program does not cause another spiraling round of inflationary cost increases that will defeat the program.

MAKING THE BEST OF WHAT YOU HAVE

Regardless of whether or what action is initiated to secure the adequate highways we need, there is one step that should be taken under any circumstances, that is, to secure the best possible efficiency from the highways and streets as they presently exist. It is the poorest kind of judgment to permit bad practices of parking, unwarranted traffic movements, and other traffic evils to reduce the traffic carrying capacity of our highways to anything less than the maximum obtainable. Even the most modern facilities imaginable can be neutralized into bottlenecks by a lack of proper traffic control, and conversely, there are many so-called bottlenecks that could be made considerable more efficient than at present if only they were properly organized by the application of traffic engineering principles.

The remedy lies in the hands of competent traffic engineers if they be given the task to do without hampering restrictions. This should be done immediately in every state, city and town where such action has not already been taken. It is probable that there will be found more returns in the way of added traffic capacity per dollar of investment in competent traffic engineering than from any other investment that could be made.

SUMMARY

Obviously, it is beyond the scope of such a paper as this, as well as impossible within the time limits set for its submis-

sion, to analyze the highway problems of 48 states, much less suggest a unique method of attack aimed at their solution. There are, of course, some general rules, or steps of procedure, that may be found capable of universal use. Some of these will here be suggested, although in many states some of them, or some adequate alternate of equal effectiveness, may already have been adopted.

It is intended here, therefore, to suggest first those moves or policies which should be used or followed in a national scope of action, and follow those with specific suggestions which may be applicable to the problems of West Virginia. Whether these latter may fit into the scheme of another states solution is subject to the limitations above mentioned, but no doubt the basic principle may be applied if appropriately modified. It is felt that these suggestions are sound, being based upon tried and accepted principles of economics.

The action required is presented somewhat in the chronological order of its proposed application although each step should not be taken as a completely independent move. Whether any individual suggestion is capable of nationwide acceptance, or of only individual state acceptance, is not indicated for every suggestion, but each suggestions capability should be readily recognized under the circumstances existing. The plan follows:

PLAN OF ACTION

(1) Obtain public recognition of the highway problem, as outlined under heading: "People Must Be Acquainted With The Facts," page 56.

(2) Initiate immediately a full scale comprehensive program of highway research, with the participation of all governmental highway agencies, Federal, State and local with particular emphasis upon determining:

(a) The costs of furnishing highway service to the various classes of vehicles.

(b) The relative costs of operation of these vehicles by classes.

(c) The balance between the operation costs at various vehicle weights and the correspondingly necessary costs of furnishing the highway in order

to ascertain the necessary limitations in vehicle and highways that will make the least total combined cost. (See under headings: "Some Unanswered Problems" and "The Truck Problem", page 54.)

(3) Obtain Federal Legislation that will:

(a) Create a new Federal Highway organization higher in the echelon of national affairs, and with greater power and authority than the present Bureau of Public Roads.

(b) Abandon the Federal gas tax so that the States may use this additional taxing power. (See under heading: "Federal Aid Policies", page 61.)

(4) Adopt a policy of Federal expenditures which will permit the Federal government to:

(a) Proceed promptly with a ten year plan for the construction of the Interstate system, through its own planning and contracting organization, or by 100 percent grants to the States with proper Federal supervision.

(b) Establish Federal-aid to States for the construction of the F. A. System on a matching basis in an amount at least equal to the total income from imposts on motor vehicles and appurtenances, which amounted to more than 1 billion dollars in 1950.

(5) Make it a requisite that Federal aid will be granted for construction only where such work is shown to be warranted economically and where priority has been established by a comparative traffic survey or by a sufficiency rating.

(6) Require of each State:

(a) An up to date road use survey of its highways.

(b) A classification of all highways into systems based upon functions, traffic usage and importance, with the establishment of minimum standards for widths, control of access both roadside and intersectional, capacities, right of way, etc. with appropriate provisions for future expansion.

(c) A survey of each system, dividing each highway into proper control sections and the determination of a numerical sufficiency rating for each rural

section, and a priority based upon an engineering-economic study for each urban section.

(d) A complete financial survey and report of the present over-all financial status and bonded indebtedness for roads and all other purposes, taxes and expenditures by purposes.

(7) Having obtained the public support as outlined in (1) above and with the factual data at hand as outlined in (6) above, by and through a continuance of the promotion work, persuade each state, as between it and the individual interests involved, to declare a moratorium on all legislative efforts to change the present limitation on loads, dimensions, speeds, etc., until such time as a scientific basis for action may become universally recognized as a result of the research recommended in (2) above.

(8) After the accomplishment of (6) above, work for appropriate State legislation that will establish a scale of motor vehicle fees and taxes for the different classes of vehicles that will equitably allocate the burden of financial responsibility among them. At the same time revise the fuel tax to the amount of maximum returns. Make an engineering-economic estimate of total probably annual returns from these sources to cover a 10 year period in the future.

Promote the passage of legislation, either State, Federal, or both, that will prohibit the use of license fee taxes on motor vehicles, or tax based on the gallonage of motor fuel used, or taxes on lubricating oil, for any purpose except the maintenance or construction of highway facilities.

(9) On the basis of the above estimate of returns, determine the total amount of bonds justified, considering deductions for current administrative, maintenance and other necessary expenses.

(10) Lay out a program of annual construction that may be accomplished within the bonding limit as in (9) above, covering a 10 year period to include those highway sections with the lowest priority ratings, (determined as in 6-c above) thus arriving at a tolerability rating; this rating of tolerability to be reviewed each year as construction progresses and changed as may be permitted by the amount of money available for each year's program.

(11) Proceed with the program as rapidly as possible under the limitations of:

(a) Ability to make plans

(b) Ability to supervise constructions

(c) Availability of contractors

(d) Ability to sell bonds at an economical interest rate

The overall program should be reviewed and revised at least annually to conform to such economic changes as may occur.

CONCLUSION

Can we afford it? A better question would be: can we afford not to have it.

Could we afford not to have the present rate of spending for national security? Can a country which has subsidized railroads by huge land grants, which subsidizes air transport, which builds huge dams to develop low cost power to sell to its citizens, which protects cities with floodwalls and conservation dams, which supports farm prices, which talks of increased social security, which talks of cradle to the grave medical aid, which seriously contemplates financial aid to the states for education, which subsidizes housing through many different channels; and in short, which apparently aims its every effort to supply its citizens with what it thinks they should have; can such a country neglect to supply its citizens with the most primary necessity of all—the means of transportation?

Transportation will decide our future—whether the material and social progress of the past shall continue to push to new frontiers of realization, or whether we shall stagnate because of an increasing lack of paths for commerce. During the past decades automotive transportation has grown from a relatively unimpressive experiment to one of the most important elements of our national economy, and the decisions to be made affecting this segment of industry will indicate the path of our future.

The time of decision is here and now. Already there is evident an increasing strangulation of automotive transportation due to the lack of adequate highways that, if continued much further, will jeopardize the very life of the nation. If the provision of the improved routes necessary for automotive

transportation is permitted to keep pace with the trends of the past 30 years (except for the immediate past) then our nation will continue to thrive. But if the influences which have been causing the inadequacy of highways during the last few years be allowed to prevail much longer, then the outlook is dark indeed.

APPENDIX NO. 1

Partial list of national organizations having a primary interest in influencing some element of motor vehicle transportation.

American Association of Motor Vehicle Administrators
American Association of State Highway Officials
American Automobile Association
American Concrete Institute
American Concrete Pipe Association
American Farm Bureau Association
American Iron and Steel Institute
American Municipal Association
American Petroleum Institute
American Public Works Association
American Road Builders Association
American Society of Planning Officials
American Society for Testing Materials
American Transit Association
American Trucking Association, Inc.
Asphalt Institute
Associated Casualty and Surety Underwriters
Associated General Contractors of America
Association of American Railroads
Automobiles Manufacturers Association
Automotive Safety Foundation
Automotive Trade Association Managers
Bureau of Public Roads
Calcium Chloride Association
Chamber of Commerce of the United States
Eno Foundation for Highway Traffic Control
Highway Conservation League
Highway Research Board
Illuminating Engineering Society
Institute of Traffic Engineers
Institute of Transportation and Traffic Engineering—University of California
Inter-Industry Highway Safety Committee
International Roads Federation
National Association of County Officials
National Association of Motor Bus Operators
National Automobile Dealers Association
National Auto Wreckers Association
National Committee for Traffic Safety
National Committee on Uniform Traffic Laws and Ordinances
National Congress of Petroleum Retailers
National Conservation Bureau
National Council of Private Truck Owners, Inc.
National Crushed Stone Association
National Highway Users Conference, Inc.
National Industrial Traffic League
National PAR Committee
National Ready Mixed Concrete Association
National Safety Council
National Sand and Gravel Association
National Slag Association
National Tank Truck Carriers, Inc.
National Gasoline Supply Men's Association
National Truck Tank and Trailer Tank Institute
National Used Car Dealers Association
North American Gasoline Tax Conference
Portland Cement Association
Presidents Highway Safety Conference
Rail Steel Bar Association
Society of Automotive Engineers
Street and Traffic Safety Lighting Bureau
Trailer Coach Manufacturers Association
Truck Trailers Manufacturers Association
Wire Reinforcement Institute
Yale Bureau of Highway Traffic

APPENDIX NO. 2

Selected Bibliography

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ON THE FOLLOWING PAGES ARE SHORT SUMMARIES OF THE ESSAYS WINNING THE NATIONAL HONORABLE MENTION AWARDS AND THE REGIONAL AWARDS.

NATIONAL HONORABLE MENTION ★ ★ ★ ★



WILLIAM E. WILLEY
Phoenix, Arizona

There's nothing wrong with our highway system that money can't cure. We have the equipment and the engineering know-how to provide the highways now being demanded by the American motorist. But even though we have more vehicles paying more tax revenue it still is not enough. It will take approximately $32 billion to improve the estimated 435,000 miles of roads that are substandard. This could be done over a 10 year period at an annual expenditure of $3 billion.

For 1952, the Federal government expects to collect $2 billion dollars from car and truck owners. Of this sum, they divert 75% to general funds and allot only 25% for road building. Less of this money should be diverted and more returned to the states for highway use. Some states and the Regional Conference of Governors advocate elimination of the Federal government from the field of vehicle taxation.

Many people do not know that Federal funds are allotted only on the basis that they are matched with an equal sum provided by the state. Furthermore, federal allotments are not honored until after the state has spent the money. Hence, each state must have a large working capital for roadbuilding programs.

If the states would collect only 50% more gasoline taxes in addition to their Federal allotment, our highway system would be startlingly improved in a matter of a few years. However, the public probably would not permit more than

25% increase. State bond issues carrying low interest rates of 1¾% to 2% could make up the deficit. The financing program would also be easier if Federal aid funds could be expanded to cover 4 or 5 years in advance instead of the present 2 year limitation.

Highway planning and priority can be programmed on a scientific basis with the "Highway Sufficiency Rating System" originated by the state of Arizona. It is a system whereby each section of road is rated up to 35 points on its CONDITION, 30 points for its SAFETY, and 35 points for its SERVICE. The critical point on a self-sufficiency score is 60. Maps can be made showing in red all sections of road which rate below 60. This shows where highway improvement is most urgently needed and where it will do the most good. A nationwide movement known as PAR is sponsoring this system for all states to help eliminate politics in programming highway construction.

One very important item most state highway departments are not fully exploiting is that of public relations. Worlds of information and statistical data are available but seldom are put into simple language for public education. Each state would find its money well spent to employ a full time public information officer.

Modern American automobiles are wonderful engineering and aesthetic accomplishments and our highway network, inadequate as it may be, is still the best in the world. But, short of new construction, little can be done to increase road capacity or restore freedom of travel. New construction spells only one thing . . . money! We need the spirit of Paul Revere to alert Americans on highway needs to keep America strong and free. With the help of God and through divine guidance, we as Free American Citizens will see the job through.

NATIONAL HONORABLE MENTION ★ ★ ★ ★



DAVID C. GUILBERT
Spokane, Washington

A terse note called me into my managing editor's office I'm Hank Sisson, business and political writer on his staff. He handed me a fat file of pamphlets and clippings. "These have been piling up fast recently," he said. "They claim our streets and highways are woefully inadequate—dig out the full story behind it."

"Yeah, there's plenty of gripes," I echoed, "but it's mostly the old cry about why don't *they* do something."

"Well, there's a letter on top with an invitation to a legislature committee meeting—maybe you can start there," he suggested as his phone jangled to end my assignment instructions.

The next morning I squeezed into a seat in the crowded committee room at our state capital. Before long the picture began to clear. It was quite different from yesteryear's "good roads" movement when the aim was to get the farmers out of the mud. Today we still must do that and also figure a way to free city workers and shoppers from mammoth traffic jams. In addition, we've got to move thousands of tons of products at the same time over the same thoroughfares at a reasonable speed and with fewer accidents.

First to address the meeting was an attorney representing truckers. "Our industry is essential so we must have better roads and congestion-free streets. Also, to give best service at lowest cost, we need roads and streets that will carry larger vehicles and heavier loads."

Almost before the trucker's spokesman was seated, the chairman for a major farm group rose to his feet. "We've got ruts and mud and snowdrifts. We're isolated lots of the time in the winter and spring and our schools even have to close down."

An automobile club official spoke for the average motorist. "Private car owners feel they are paying more than their share of taxes. They are fearful of accidents and feel that lack of parking deprives them of full value of car ownership."

And so it went. Each group had its own particular problems and needs. Merchants complained that lack of parking costs them business. Road house and motel operators decried limited access highways that rigidly channeled customers past their doors.

Later over a leisurely dinner with the committee officials, we discussed the overall problem. We agreed that it was not what to do or how to do it. All we need is full public understanding and the will to act. We can start with our inventory of needs and costs. We can finance the program with equitable taxes backed with an educational program to show that operating savings will outweigh levies. Then, with an informed public and sound leadership, the people will provide the momentum for a better highway program that will overcome one of the nation's most complex and difficult problems.

NATIONAL HONORABLE MENTION ★ ★ ★ ★



WILLIAM F. STEUBER
Madison, Wisconsin

Our present highway system works remarkably well. It has troubles, and serious ones, but they are signs of growth, not of deterioration. The main trouble is that we are using it to capacity. The value, strength and uniformity of our highway system today exist because of the foresight and method put into road matters by the Federal Aid Highway Acts, from the first in 1916 through to the latest 1952 act.

The weaknesses and troubles in our highway transportation today exist principally in those categories on which the Federal Aid Acts are silent. Each of the 48 states has a different idea of how much a motor vehicle should pay for highway services. Fuel taxes vary from two to nine cents per gallon. Legal weights, dimensions, etc , vary from state to state. Highway transportation is a single national problem. Our error lies in regarding it as 48 separate problems.

What is needed is a Federal Highway Transportation Act. The Bureau of Public Roads has administered the Federal Aid Highway Acts for many years with unquestioned efficiency and judgment, and this would merely extend it into a broader field.

This Transportation Act would provide for six principal features:

1. All Federal revenues collected from motor vehicles and their use would be segregated and applied to highway purposes only. The cost of providing transportation facilities is so great that no motor vehicle revenue either

in the states or in the Federal government can be used for other purposes.

2. There should be a concentrated effort for extensive construction on the National System of Interstate Highways. This important part of our highway system must be built up. Toll roads, which are impractical, indicate the need for immediate action.

3. A central national analysis should be made of each state's needs in state revenues for its highways. Additional Federal aid, which the states must match, will require additional state revenues. The Act would provide a uniform scale of state taxes dependent on their needs.

4. Uniform registration of vehicles would be required in each state before Federal aid would be forthcoming.

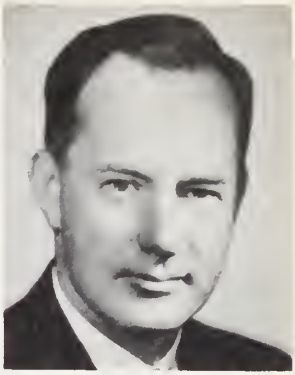
5. Complete reciprocity between all states for all motor vehicles would be established. The analyses mentioned in item No. 3 would assure that there would be no disadvantage to any state as a result of reciprocity.

6. The Uniform Vehicle Code would be reviewed and revised, and must be accepted by a state before it is eligible for Federal aid.

In summary, we can plan and pay for the safe and adequate highways we need by carrying forward and enlarging the same types of Federal acts that have so efficiently brought our roads to their present state of high usability. Many will object to any suggestion of further Federal centralization in highway transportation, but the need is for one answer, not 48 different answers, and finding it will simply be a continuation of the processes which make this nation the United States of America.

REGIONAL AWARD ★ ★ ★ ★ ★

New England Region



RUSSELL E. MACCLEERY
North Chichester, New Hampshire

The highway problem calls for the joint effort of Federal, state, county and municipal governments supported by an informed public. The Federal government should put emphasis on the inter-state highway system, but should contribute also to the cost of other roads. The states should continue to have the basic responsibility for highways, and in addition to the work they do themselves they should supervise the disposition of funds which they distribute to counties and municipalities. Each state should have a long-range plan, which should be published and used to obtain public support. This plan can be developed and largely carried through by an interim highway study committee authorized by the legislature, consisting of representatives from all interested groups. The program should include separate studies of administration, engineering, traffic engineering and financing, which can then be combined into one report to the legislature and widely publicized.

The county should be the smallest highway administrative unit in a state, and could be organized in the same manner as the state, with a planning committee and a long-range program. Studies would indicate relative priorities in construction based on sound financial considerations. State money should be used by the county for new construction only, and should be a supplement to local revenues, not a substitute.

Cities should have a master plan, administered by competent engineers, covering particularly traffic engineering and off-street parking.

How to pay for better roads is the biggest problem, as we have advanced more in highway engineering than in highway financing. Since everyone benefits from highways, the cost should be partially borne by the Federal government and the general public. The motor vehicle use taxes raised by the states will continue to be the main source of funds, however, and none of this should be diverted to other purposes. There is much discussion of new types of use taxes, such as the ton-mile tax for trucks, but these seem to have impractical features, and the present combination of fuel tax and registration fee appears the fairest method of assessing highway users.

Toll roads may have advantages in certain instances, but this method of financing should be approached cautiously. At best, toll roads could take care of a very small part of our requirements. The wise use of bond financing seems to offer greater possibilities.

It is evident that additional revenues from some source will be necessary, and one of the quickest methods would be for the Federal government to retire from the field of automotive excise taxation. Elimination of the fuel tax particularly would allow adding this amount to the state tax where it would be applied to highway use.

Public support is absolutely necessary to this program. The individual states should do all they can in this respect, and PAR seems to offer the best opportunity to carry this out on a national basis.

We can obtain a safe and adequate highway system by all levels of government working together cooperatively through developing better methods of highway administration, planning, financing, construction and maintenance. And above all, since highways are the people's business, an informed public opinion on highways must be maintained.

REGIONAL AWARD ★ ★ ★ ★ ★

Middle Atlantic Region



JOHN J. RYAN

West New York, New Jersey

It's fun to dream of a fine summer trip to faraway places with the magic names Appalachian, Continental Divide, Death Valley . . .

Only I won't be making such a trip.

Matter of fact, I don't drive half as much nowadays . . . only 8000 miles last year. They were expensive miles too when you add up depreciation, insurance, taxes, and everything. Before long I may decide it is too expensive.

Sure, I'd hate to give up my car. I can remember when motoring was a pleasure. Today it is different. Now much of our economy depends on vehicles. So, if I have to give up my car, a motel, a roadside market, a gas station will lose a customer. One customer may not be much, but if a lot of people feel like I do . . .!

The road past my door is poor. Built 30 years ago, it is a winding, dangerous, heavily-travelled thoroughfare that originally was a path which later was widened to a wagon-road and then paved. There is no money to improve it. Meanwhile it gets worse and I travel less. Even so, this road and many others like it cost me money. My family budget must be $50 to $100 a year higher because of transportation delays, property damage, and high insurance rates caused by such roads. This hidden extra expense is not borne by car owners alone . . . it is everybody's problem.

Traditionally we decentralize government to the lowest local unit, yet there are some functions like national defense

that can be handled best by a federal agency. We must revise our thinking to include highways in that category. We can start at the national level with the appointment to a cabinet post of a Secretary of Transportation. His duties would consist of overall coordination, and liaison with Congress. At sub-cabinet level, we should have a Department of Roads and Highways responsible for long range planning, testing, and advising. Highway construction should be a function of the states under organizations similar to the federal government.

Financing of this immense program at federal level should spread over the life of the plan. Levies should be general rather than specific and could be augmented through the sale of long term bonds. It is generally recognized that in the next few years, barring all out war, defense spending will slack off. Some economists think this might trigger widespread unemployment. A highway program would smooth that transition.

Perhaps it is all a grand dream, this looking at a map with wonderful places and exciting names. Perhaps I was wrong in picking the road outside my door for all of us are thinking of the roads outside our doors and the problem doesn't seem big enough for us to bother about. But if we start thinking about how big this thing really is, how much it really hits all of us, we'll begin to understand that it takes big measures to beat it. Putting away my map, I can't help but think that we had better do it . . . and very, very soon.

REGIONAL AWARD ★ ★ ★ ★ ★

East North Central Region



AUSTIN F. BEMENT
Detroit, Michigan

To those of us who took part in the movement to promote "Better Roads" beginning back in 1913, the traffic "crisis" of '53 seems strangely familiar. Today's problem is basically the same. It may seem more complicated, but I believe it is really much simpler. And the same technique that brought success then will work today. That technique is publicity. When the American people understand a problem and are shown a sensible solution, they see that something gets done about it.

In 1913 there was little to start from. From Pittsburgh to Sacramento there was not a mile of hard-surfaced road outside cities. It took us eight days to drive 400 miles across Iowa. In 1917 the Army could find no information in Washington as to whether trucks could be driven from Detroit to Newport News, Virginia. Roads were largely the responsibility of townships. The Federal government had no power to help and little interest in it. With only 1,258,060 motor vehicles registered in the United States, there were fewer people interested in good roads.

Today the problem is primarily one of finance. Our highway system is well-planned and our engineers and builders know what to do if they have the money. It is estimated that it will require a little over six billion dollars a year to do the job, so the question boils down to where we can get this amount. The Federal government collects in excise taxes on motor vehicles, parts and gasoline about 2½ billion dollars a year, of which one-fifth goes to highways. The states collect

2.6 billion dollars of which over 90 per cent is used on roads. Local units collect and spend another billion. The total of this is 6.1 billion dollars a year in special taxes on motorists, so the fact is that we are paying for safe and adequate highways and not getting them.

If the general public can be interested, they can influence the states and Congress to spend this money on roads. The need is for publicity and organization, and the National Par Committee seems a good nucleus for the organization. With the support of the automotive industry, PAR should be able to carry through a campaign the scope of which will seem sensational to those who have never led an altruistic movement for the public good.

REGIONAL AWARD ★ ★ ★ ★ ★

West North Central Region



FORST LOWERY
Minneapolis, Minnesota

We are a nation of graph extenders. Give us a sheet of square-ruled paper, some statistics for 30 or 40 years, and immediately we project a dotted line into the future. But we are shortsighted basing predictions only on past experience. How many cars will use the roads we are planning? . . . some say 80 million by 1975. Before we back that guess with a multi-billion dollar road program, let's see what the philosophers and logicians have to say.

The human population is much more accurately forecast. Since each individual can drive only one at a time, the maximum number of vehicles in use will be the same as the adult population. However, the very *amount* of automobile use can change the pattern. What if a roadable plane came into the picture? What if our cargo trucks had flanged wheels to ride on rails? What if our city trolleys turned to overhead monorails?

Dreamstuff? Sure, but we dare not project our planning on a hasty over-the-shoulder look at today's conditions. Let's suppose that beat-up stretch of two-lane rubble between Metropolis and Bigville passes through the main street of Littletown. Should we build a modern multi-lane highway along the same cowpath, either choking it down through town or tearing out buildings? Danger lies in building tomorrow's road system only in the direction it is growing now and on the same accelerating curve.

Even if tax diversion is limited we face skyrocketing

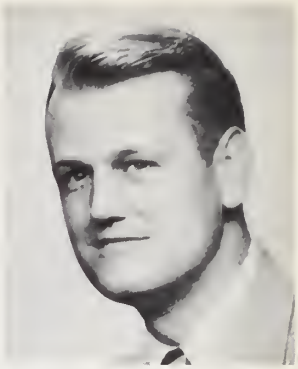
taxes. It can't be sugar-coated but neither should we be constantly reminded with an irritating sign on the gas pump that "X% of your gasoline dollar goes for taxes." Psychologically, it might be worthwhile to help hide taxes by quoting prices that include them. Taxes should be equitably levied according to use by some variation of Oregon's weight-distance bill.

Whatever we do, let's not kid ourselves, we can build a "safe highway". Engineering skills can divide highways, separate crossings, channelize traffic, and widen shoulders, but they can't shorten human reaction time. Indeed, the ultimate in safe roads is one so clogged that no vehicle can move. Nevertheless, our goal *really* is a smooth flow of traffic, with dispatch, without congestion, and with a minimum of danger.

Inasmuch as most people recognize our problem even though dimly and vaguely, the job of dramatizing our needs is not nearly as tough as might be . . . for the pot-hole in front of one man's house is but a single pockmark among millions in the whole road network. A campaign for public action already is off to a good start. Interested industries, with the help of the Advertising Council should carry it further. "Make no small plans" is sound advice . . . certainly it is false economy to settle for anything less. For, after all, no second-rate program will ever put a real road system back under the wheels of America.

REGIONAL AWARD ★ ★ ★ ★ ★

South Atlantic Region



LEWIS W. WATERS, JR.
Asheboro, North Carolina

The most effective agency for approaching our highway problem is the state. Whereas the Federal government is too restricted by statute and custom, local governments have the necessary freedom of action but generally lack financial and manpower resources. Hence, only the states can approach the highway problem effectively.

The first requisite is a non-partisan and non-political commission. Its starting point lies in a complete audit of what already exists. Since every mile of highway infringes on the jurisdiction of some town or county, and interstate highways affect neighboring states, cooperation of government authorities at all levels is required.

Once needs and priorities are established the problem fundamentally becomes one of finance. Each source of revenue must be analyzed as to its potential without hardship, and its equitability. While no single formula applies to all states, it should be borne in mind that: transportation is essential to general welfare; everyone uses or depends on highways and thus should contribute; merchants and industries benefit indirectly so should pay proportionately; heavy truckers should bear lion's share of additional highway costs necessitated by their requirements through the medium of a ton-mile tax.

As soon as funds are available, the coordinating authority should make specific recommendations to the governor and legislature. With construction underway, the coordinating

authority should initiate studies on administrative problems of organization, procedures, and personnel. Broadly, the aims should be to make highway construction a professional career free from political patronage, maintain continuity of program, and, in general, institute studies of all automotive transportation from parking to the aesthetic aspects of roadside billboards.

Beyond its capacity to detail a specific highway program, a coordinating highway authority has unlimited opportunities to serve as an advisory body, a liaison agency and a watchdog on legislation and appointments. It also can be an informative group to help sell the overall program to the public. Americans must be informed before they are sold and they must see what they are getting for their money.

The solution to our highway problem involves big thinking, realistic goals, and effective informing and selling. It will be neither easy nor painless . . . but if expeditiously and aggressively carried out, is absolutely certain of success.

REGIONAL AWARD ★ ★ ★ ★ ★

East South Central Region



NED WILLIAMS
University, Mississippi

The advent of motor transportation has had tremendous impact and lasting effect upon virtually all phases of American life. The rapid development of the automotive industry provided a great expansive influence for the economy as a whole, and the millions of motor vehicles now registered make the provision of safe and adequate highways a self-evident necessity.

Historically the responsibility for provision of highways, roads and streets has belonged primarily to government. There have been questions of the proper division of that responsibility between the various levels of government, but it has been worked out satisfactorily in this country and there seems no need for any radical change in the present division of responsibility.

There should be careful research programs to classify highways and establish proper standards of construction. These standards must take into account a multitude of factors—cost, durability, safety, future developments, type and density of traffic, maintenance, right-of-way costs, etc., thus giving the necessary flexibility.

The total cost of construction and maintenance of a safe and adequate highway system can be determined only through careful study, based on the above standards. The amount will be greater than is now being spent, and changes must be made in the financial methods. Using 1949 figures, there would have been available $6,691,000,000 if there had been no diversion

of taxes and fees levied on motor vehicle operators and highway users. But $1,131,000,000 was diverted, mostly by the Federal government. There should be no diversion of such funds.

A good highway system benefits other people than motorists, and therefore others should contribute to its cost. A tentative suggestion for this cost division is: highways, 10% to national defense, 15% to property owners and other groups, 75% to the highway users; roads, 50% to property owners, 50% to users of roads; streets, 75% to property owners, 25% to users.

In conclusion, the determination and application of standards, segregation of funds for highway use, and apportionment of cost according to benefit will, with honest and efficient administration and the exercise of suggested financial controls, provide us with a safe and adequate system of highways, roads and streets.

The success of this, or any other, program is dependent, however, upon aroused and continuing vigilance and interest of the American people.

REGIONAL AWARD ★ ★ ★ ★ ★

West South Central Region



WALTER L. POPE
Little Rock, Arkansas

The answer to our highway problem lies in three jointly connected parts. They are: (1) informed and aroused public interest, (2) an efficient nationwide highway administration to guide our already sufficient road-building machine power and manpower, (3) a steady supply of funds.

The success of our efforts 35 years ago to "Get Us Out of the Mud" may contain the key to our present tremendous problem. They show the way to classify our fast-growing network and the necessity for giving preference to the portion of greatest potential use. Today's needs are extensive and complex but oftentimes public interest in nationwide propositions is diffused and weak. Hence what America now needs most is a strong demand for a national road-building program. We must coordinate the efforts of many business and civic organizations to generate a groundswell of public opinion for safe and adequate highways.

Glancing at a map of our highway network and considering the multitude of differing needs and requirements, it is amazing there has been as much continuity and uniformity as is found. Indeed, we find enough agreement to indicate that with proper guidance the great jigsaw puzzle can be integrated to provide safe and adequate highways for present and future needs. Surveys now being competently undertaken by State Highway Departments in cooperation with the Bureau of Public Roads should be hurried to completion. The American Association of State Highway Officials can serve as a

clearing house for garnering information and for coordinating construction programs and financial needs.

Colossal funds will be needed to construct an adequate highway system . . . experts tell us $32 billion must be spent in the next ten years to correct present deficiencies besides whatever accumulates during that period. Last year we spent $30 billion for vehicles, fuels, and everything pertaining to highway transportation but of that sum, only $2½ billion was collected in gasoline taxes and license fees. Considering we have only a 53-cent dollar, we should be willing to pay more for better highways. Of the $2 billion collected by the Federal government, only 26% is appropriated for road-building. That formula should be reversed to return a lion's share for highway users' benefit. Or better still Bill No. 216 now before Congress by Mr. Magnusson and Mr. Kilgore to create a "Federal Highway-Aid Trust Fund" into which would be paid all Federal automotive taxes collected (or a bill similar to it) should be enacted into law.

Motorists have been such easy marks for levies that a pay-as-we-go program could become an unbearable tax load. Bond issues can ease the burden and, since they are a form of installment plan for road-building, they should be no more objectionable than borrowing money to buy a car. When the public comes to realize that it cannot afford the economic waste and loss of life on our present unsufficient highway system, and when it learns that such loss can be greatly minimized, we will see the end to the resignation and pessimism which regards the present situation a hopeless plight.

REGIONAL AWARD ★ ★ ★ ★

Mountain Region



ALBERT ERICKSON
Helena, Montana

The United States, a free-wheeling nation with 53,000,000 vehicles, has a highway problem that is fully as important as any of our other ones of national scope. Agencies already at work cannot cope with public apathy. We must evaluate our highway system in terms of economic life and military security, educate the public on the seriousness of the situation, and orient our thinking with a sound nationally co-ordinated program for the future.

State Governors should appoint interested citizens to serve on coordinating and planning committees, and spark-plug statewise publicity campaigns. Each community should organize meetings to discuss local needs and transmit recommendations to state groups. The White House should call a conference on highway planning and financing similar to the one on education and health. It should include Congressional leaders, Federal highway officials, and representatives from the states.

As to financing, the program will indirectly pay for itself through reduced accidents, lessened property damage, lower operating costs, saved time, and increase of land values. Some of the capital outlay can be gained through full disbursement to the states of the two billion dollars the Federal government collects each year in gasoline and excise taxes. Further, the states should pass uniform laws prohibiting diversion of automotive taxes. Additional financing can be gained through a weight-distance truck tax similar to that

pioneered by Oregon. Toll roads too should be constructed where traffic density will make them self-supporting.

In striving to implement America with the highways it needs, we must build tomorrow's highways today. Highway users must bear the burden of the costs. We must spend more money and get the most for every dollar. We must get traffic out of the cities by decentralization and never again allow our roads to lapse into functional obsolescence. Above all, we must recognize our highway needs as so vital to our national welfare that they will transcend petty politics and pressure from lobby groups.

This proposal is based on two concepts: 1. That when a need is properly presented to Americans, they will act. 2. That highway users must bear the burden of highway costs.

REGIONAL AWARD ★ ★ ★ ★ ★

Pacific Region



BRYANT HALL

San Francisco, California

The real problem in meeting our highway needs is how to get action . . . how to make use of what we already know about planning and paying for adequate roads. All that is lacking is the collective and unflinching will to tackle the job.

Without belittling the importance of new ideas in planning and financing, it is evident that we must deal with a great variety of ways to meet the many specific circumstances which prevail throughout the land. Some will say the secret is to build more expressways while others will recommend public transit to relieve the vehicular load. One will argue that the higher cost of truck-resistant roads must be borne by special taxation on ton-mileage. Another will maintain that elimination of Federal tax diversion will provide ample finances for the roads we need. All these and many other solutions will be suggested. Some will be suitable in one place and inadequate in another. None will be universally practical or adaptable . . . none will produce positive action.

And so we come by simple logic to the real solution. Publicity, salesmanship, and skillfully organized education, intensive in character and extensive in scope, can and will bring results through the planning, financing, and constructive genius of the American people. Indeed, the element of this idea doubtless underlies the significant action of General Motors in calling forth this series of essays. For who will deny the strong likelihood that publicity from this contest itself may prove to influence progress toward better highways

to a greater degree than all the essays put together?

Hitherto, there has been no unified nationwide campaign of publicity for an adequate highway system. Such a campaign must be deliberately conceived and entrusted to the most skillful public relations experts. It must make use of the press, radio, television, films, mails, and speakers. Material must be adapted to the local situation in each of the states. It must be adequately financed by subscriptions from the automobile industry, motorists clubs, oil companies, trucking concerns, civic organizations, realtors, and the public in every walk of life. The guiding principal should be that "only an informed people can act wisely." Thus and only thus can we attack the highway problem at its roots. Let's follow the roadside marker set up by General Motors and keep on this strictly American Way until we reach our objective!

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